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Desert Harvest Solar Project

Final Environmental Impact Statement
and
Proposed California Desert Conservation Area Plan Amendment

Volume 3 - Appendices B through G

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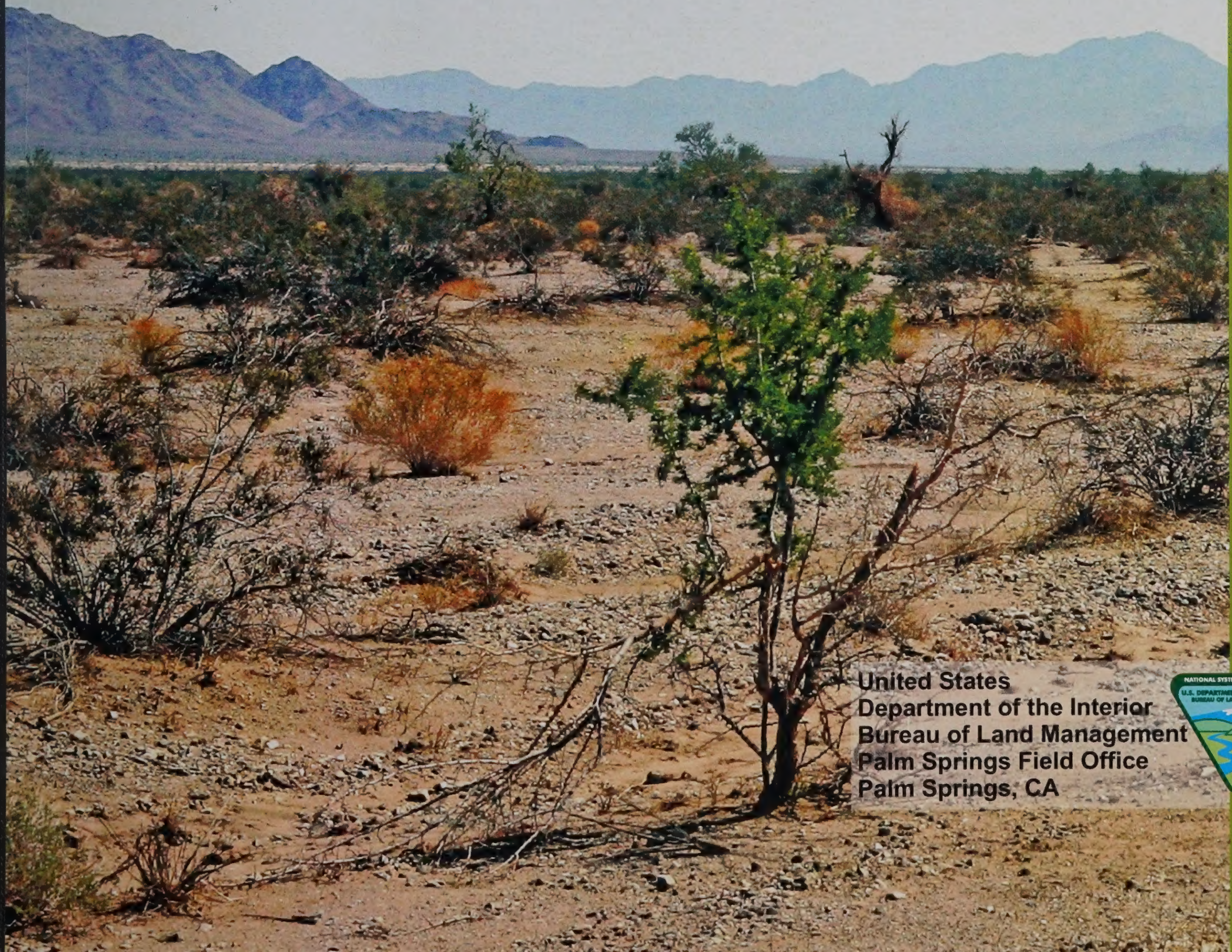

United States
Department of the Interior
Bureau of Land Management
Palm Springs Field Office
Palm Springs, CA

BLM

Cover Photo: View of the solar facility site from Kaiser Road

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Scoping Report

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SCOPING REPORT

Desert Harvest Solar Project

Environmental Impact Statement and
California Desert Conservation Area
Land Use Plan Amendment

Bureau of Land Management

NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

October 2011

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1 INTRODUCTION

1.1 The Purpose of Scoping

Scoping is the process for an Environmental Impact Statement (EIS) by which the Lead Agency solicits input on the issues and impacts that will be addressed in a National Environmental Policy Act (NEPA) document as well as the degree to which those issues and impacts will be analyzed. The intent of scoping is to focus the analysis on significant issues and reasonable alternatives, to eliminate extraneous discussion, and to reduce the length of the EIS.

Scoping must be conducted both internally with appropriate BLM staff, and externally with interested and affected public, agencies, tribes, and organizations (40 CFR 1501.7).

The Council on Environmental Quality (CEQ) regulations at 40 CFR 1501.7 require the following in an agency's scoping process:

- Invite participation from affected federal, State, local, and tribal organizations and interested persons.
- Determine the scope or extent of the EIS and the significant issues to be analyzed. Scoping is valuable in identifying connected, cumulative, and similar actions.
- Eliminate those issues raised that are not related to potentially significant impacts or those that have been covered in other environmental documents. Make assignments for preparation of the EIS between the lead and cooperating agencies.
- Identify any environmental documents being prepared that have relevance to, but are not part of, the scope of this EIS.
- Identify other environmental review and consultation requirements.
- Discuss the relationship between the timing of the preparation of the EIS and the agency's tentative planning and decision-making schedule.

1.2 Brief Description of the Project

enXco has requested a right-of-way (ROW) to develop the Desert Harvest Solar Project, a photovoltaic generating facility with a footprint of approximately 1,208 acres. The overall site layout and generalized land uses would include a substation, an administration building, operations and maintenance facilities, a transmission line, and temporary construction lay down areas. The project's 230-kilovolt (kV) generation-intertie (gen-tie) line would either be a shared facility with an adjacent approved project, First Solar's Desert Sunlight Solar Farm, or would be located on private and BLM-administered lands in the Chuckwalla Valley. The project would interconnect to the regional electric grid via the planned 230/500-kV Southern California Edison Red Bluff Substation.

1.3 Potential Land Use Plan Amendment to the California Desert Conservation Area Plan

The project would be located on land that is subject to the BLM's California Desert Conservation Area (CDCA) Plan. All of the public lands in the CDCA under BLM management, except for a few small and scattered parcels, have been designated geographically as a Multiple Use Class (MUC) as follows: Controlled Use (C), Limited Use (L), Moderate Use (M), and Intensive

Use (I). The Project is mostly located in BLM designated M lands. For M lands, wind and solar electric generation facilities may be allowed after National Environmental Policy Act (NEPA) requirements are met. The transmission corridor is located within (L) lands, which are lands managed to provide lower-intensity, carefully controlled multiple use of resources while ensuring that sensitive values are not significantly diminished. The CDCA also states that sites associated with power generation or transmission not identified in the CDCA will be considered through the Plan Amendment process. The project site is currently not identified in the CDCA. The CDCA Plan also allows new transmission facilities within corridors. There is not a corridor located between the generation location to the substation. Therefore, prior to right-of-way (ROW) grant issuance, the project would require a Land Use Plan Amendment to the CDCA: to find the generation site suitable for large scale solar generation and allow this use, and to allow the transmission line outside of a corridor.

2 SCOPING PROCESS SUMMARY

2.1 Notice of Intent

The BLM published a Notice of Intent (NOI) to prepare an EIS on September 15, 2011 in the Federal Register Volume 76, Number 179. Publication of the NOI began a 30-day comment period which ended on October 17, 2011. BLM provided a website with project information that also described the various methods of providing public comment on the project including an e-mail address where comments could be sent electronically.

2.2 Public Notification

Notification for public Scoping Meetings was posted on BLM's website. In addition, notices were sent to all landowners within 300 feet of the project boundary and other interested parties during the week of September 19th.

2.3 Public Scoping Meeting

Public Scoping Meetings were held on October 3, 2011 at the University of Riverside Palm Desert Graduate Center located at 75-080 Frank Sinatra Drive in Palm Desert, California and at the Lake Tamarisk Clubhouse located at 26251 Parkview Drive in Desert Center, California. A public Scoping Meeting was held on October 6, 2011 at the Joshua Tree Community Center located at 6171 Sunburst Street in Joshua Tree, California. A presentation describing the environmental review process was presented by the BLM, and a presentation on the project was made by enXco. Attendees were documented by signing in on a voluntary sign-in sheet, including 6 attendees at the University of Riverside Palm Desert Graduate Center along with KMIR TV, 30 attendees at the Lake Tamarisk Clubhouse, and 7 attendees at the Joshua Tree Community Center. A court reporter documented the questions and public comments made at the three scoping meetings.

Attendees included residents from Desert Center and Lake Tamarisk, federal and State agency representatives, nearby business owners, Tribes, Chamber of Commerce members, and an environmental group representative. Eight of the attendees were on the Desert Harvest mailing list prior to the public scoping meetings.

2.4 Written Comments

Twelve comment letters were received within the comment period. Scoping comments were accepted until October 21, 2011.

3 COMMENT SUMMARY AND ANALYSIS

Issues were identified by reviewing the comment documents received. Many of the comments identified similar issues. The following section provides a summary of the issues, concerns, opportunities, and/or questions. For this report, the issues have been grouped into one of the three following categories:

- Issues or concerns that could be addressed by effects analysis;
- Issues or concerns that could develop an alternative and/or a better description or qualification of the alternatives;
- Issues or concerns outside the scope of the EIS.

The comments discussed below are paraphrased from the original comment letters and Scoping Meeting transcripts. To a minor degree, some level of interpretation was needed to identify the specific concern to be addressed. Many of the comments identified similar issues; to avoid duplication and redundancy similar comments were grouped together and then summarized. A copy of the comment letters is included in Attachment A to this Scoping Report. Transcripts from the Scoping Meetings are presented in Attachment B. The NOI and the notice of public scoping meetings are presented in Attachment C. The project mailing list is presented in Attachment D. Meeting attendees and meeting speakers are listed in the sign-in sheets and speaker cards shown in Attachment E. The presentation shown at the scoping meetings is in Attachment F. The maps and visual aids presented at the scoping meetings are located in Attachment G.

3.1 Effects Analysis

Purpose and Need

- The purpose and need should be a clear, objective statement of the rationale for the proposed project. It should discuss the project in the context of the larger energy market that this project would serve and how this project would assist the State in meeting its renewable energy portfolio (RPS) and goals.
- The purpose and need statement should not simply indicate that BLM is responding to an applicant's right of way application. The framing of the purpose and need should be broad enough to support alternatives that are meaningful.
- Purpose and Need Statements in many BLM documents reflect a need to develop so many megawatts on so many acres of public lands. The goals of Section 4 in Secretarial Order 3283 clearly state a need for environmental responsibility: "the permitting of environmentally responsible wind, solar, biomass, and geothermal operations and electrical transmission facilities on the public lands." The Purpose and Need Statement should reflect a need to protect and preserve habitat for sensitive species, preserve important ecological habitats, and to preserve sensitive cultural resources.

Monitoring

- EIS must explain the monitoring programs that will be in place to monitor the short and long term impacts of the project. This should include the timelines, and estimated costs and sources of funding for the monitoring programs.
- Incorporate mitigation, monitoring and reporting measures that result from consultation with USFWS and California Department of Fish and Game and incorporate lessons learned from other solar projects and recently released guidance.

Decommissioning

- Decommissioning Plan should include cost estimates including a bond or other form of financial assurance adequate to cover costs of decommissioning, time allotted to decommissioning, and a description of decommissioning measures.

Public Participation

- BLM should have provided additional information to the public, especially in the nearby communities. Few people in Desert Center were aware of the scoping meetings and no notices were posted in the community.

Air Resources

- EIS should provide a detailed discussion of ambient air conditions, National Ambient Air Quality Standards, and criteria pollutants nonattainment areas in the Project Area.
- EIS should estimate emissions of criteria pollutants from the Project, specify emission sources by pollutant, identify a Draft Construction Emissions Mitigation Plan and adopt such a decision in the Plan of Decision.
- EPA included recommendations for control measures including for the Fugitive Dust Control Plan, Mobile and Stationary Source Controls, and additional administrative controls.
- EIS should analyze the health impacts that airborne particulates from construction dust will have on the local residents of the area, including Valley Fever.
- EIS should analyze the cumulative impacts on air quality that will result from the removal so much stabilized soil and biological soil crust. EIS should consider how the cumulative effects of the large development projects in the Chuckwalla Valley would impact the air quality of the Chuckwalla DWMA and the Joshua Tree National Park.
- EIS should discuss how cumulative air impacts will be monitored so that the National Park Service and other land management agencies have accurate data on the cumulative and individual impacts of development projects in the Chuckwalla Valley.

Biological Resources

- EIS should identify all petitioned and listed threatened and endangered species and critical habitat in the project area. EIS should identify and quantify which species and critical habitat would be affected directly, indirectly, or cumulatively by each alternative. Protocol-level seasonal surveys should be performed for sensitive plant species and vegetation communities, and animal species under the direction and supervision of the resource agencies. Full disclosure of survey methods and results to the public and other agencies without limitations imposed by the applicant must be implemented.

- Vegetation/wash habitat mapping should be at such a scale to provide an accurate accounting of wash areas and adjacent habitat types that will be directly or indirectly affected by the proposed activities. A half-acre minimum mapping unit size is recommended.
- Desert woodland communities, including an Ironwood forest, are present along washes in the project area and stands of ironwood. EIS should inventory the vegetation communities present on the site and explain for each alternative considered what avoidance measures will be adopted to minimize impacts to any rare desert communities.
- NEPA analysis should identify to what extent the proposed project would affect lands within the dissected fans or upper bajadas adjacent to the McCoy Mountains which contain higher quality desert tortoise habitat, and identify alternatives or impact avoidance measures necessary to avoid habitat loss in these areas.
- EIS should describe the restoration and rehabilitation activities that will be required for habitat disturbed during construction. Rehabilitation of desert habitat is a long, slow and uncertain process.
- BLM should consult with the U.S. Fish and Wildlife Service (USFWS) and prepare a Biological Option under Section 7 of the Endangered Species Act. BLM should coordinate across field offices and with the USFWS and California Department of Fish and Game to ensure current and consistent surveying, monitoring, and reporting protocols.
- EIS should discuss monitoring, mitigation, and translocation management plans for sensitive biological resources including an Avian Protection Plan; Raven Monitoring, Management, and Control Plan; Burrowing Owl Mitigation, Monitoring, and Translocation Plan; Desert Tortoise Relocation/Translocation Plan; Desert Tortoise Compensatory Mitigation Plan; Special-Status Plant Impact Avoidance and Mitigation Plan; Management Plan for Sand Dune/Fringed-Toed Lizard.
- Design of Gen-Tie Line should be in compliance with current standards and practices to reduce raptor fatalities; see Avian Power Line Interaction Committee documents. EIS should also include a requirement for an Avian Protection Plan.
- **Avian Species.** EIS should limit construction activity period to September 1 to February 1 if burrowing owls are present in the area as noted in the NECO Plan [at 2-43].
- EIS should consider impacts to bird species in region that are state protected, NECO special status species, and/or BLM sensitive species, including Golden Eagle (*Aquila chrysaetos*), Loggerhead Shrike (*Lanius ludovicianus*), Western Burrowing Owl (*Athene cunicularia hypugaea*), Le Conte's Thrasher (*Toxostoma lecontei*), Bendire's Thrasher (*Toxostoma bendirei*), Crissal Thrasher (*Toxostoma crissale*), Swainson's hawk (*Buteo swainsonii*), Vaux's Swift (*Chaetura vauxi*), and Brewer's Sparrow (*Spizella breweri*), prairie falcon (*Falco mexicanus*), and mountain plover (*Charadrius montanus*).
- The Applicant should conduct golden eagle surveys rather than relying on data from other projects. Surveys should provide information regarding golden eagles within a 10-mile radius of the project area for the EIS analysis. See Golden Eagle Inventory and Monitoring Protocols (Pagel *et al.* 2010).

- EIS should consider impacts of polarized reflection of PV facilities on birds and insects.
- EIS should consider risk of avian mortality from collision with structures as reflective surfaces are especially prone to collisions. EIS should include a risk analysis to resident and migratory birds and determine the collision risks.
- **Wildlife Corridors.** EIS should discuss habitat fragmentation and obstruction of wildlife because Project is located between Joshua Tree National Wildlife and Chuckwalla Desert Wildlife Management Area. The project site is located within an identified California Essential Habitat Connectivity corridor, and an evaluation of the project's impacts on wildlife movement is essential.
- The EIS should ensure any proposed on-site wildlife movement corridors are wide enough to minimize edge effects and allow natural processes of disturbance and subsequent recruitment to function. The EIS should also evaluate whether the proposed wildlife movement corridors would provide key resources for species, such as host plants, pollinators, or other elements. For example, many species commonly found in washes depend on upland habitats during some portion of their cycle. Therefore, in areas with intermittent or perennial streams, upland habitat protection is needed for these species. Upland habitat protection is also necessary to prevent the degradation of aquatic habitat quality.
- **Mitigation lands.** Compensatory lands, locations, and management plans should be addressed in the EIS for impacts to waters of the State and biological resources. Given the cumulative solar projects in the Chuckwalla Valley area, land may not be available to compensate for environmental impacts and may serve as a limiting factor.
- Acquisition lands may be required as part of the mitigation and will need to be managed in perpetuity for conservation. Mitigation lands should be high-quality habitat and, at minimum 5:1 mitigation should be provided of all acres of burrowing owl habitat destroyed.
- The primary mitigation for impacts to desert tortoise and rare plants should be avoidance or the acquisition of occupied compensation habitat since this is the only mitigation measure that will offset the habitat loss. Acquisition of habitat should be accompanied with enhancement measures to compensate for the net loss of habitat. These measures may include removal of livestock, fencing where appropriate, invasive species control, small scale restoration projects, and route closures.
- **Sensitive Plant Species.** EIS should consider rare and sensitive plant species. The southwestern piece of the Project overlies a significant population of Emory's crucifixion-thorn, *Castela emoryi*. Emory's crucifixion-thorn found in locally restricted sites in the southern Mojave and Sonoran deserts with only 13 records from the NECO Plan area (page 3-24).
- A number of other rare plants occur on the project or in the vicinity including the Coachella Valley Milkvetch (*Astragalus lentiginosus* var. *coachellae*), California ditaxis (*Ditaxis serrata* var. *californica*), foxtail cactus (*Coryphantha alversonii*), slender-spined all-thorn (*Koeberlinia spinosa* ssp. *tenuispina*), California ayenia (*Ayenia compacta*), Harwood's milkvetch (*Astragalus insularis var. harwoodii*), Coves' cassia (*Cassia covesii*), Las Animas colubrine (*Colubrina californica*), desert unicorn plant (*Proboscidea althaeifolia*), and desert devil's claw (*Proboscidea althaeifolia*).
- For rare plants, avoidance is preferable. If transplantation is to be a part of the mitigation strategy, a detailed final plan must be included as part of the EIS on the methodology for deter-

mination of appropriate conservation area where plants may be transplanted, when/how plant are to be transplanted and identification of success criteria for transplantation. Monitoring of the transplanted plants needs to occur for a time period that is realistic to evaluate long-term success of the plants.

- **Desert Tortoise.** EIS should clearly characterize and identify desert tortoise population on site and should consider the status of tortoise in the affected recovery unit. The Project area will likely have desert tortoise occurring on site, because 1) it connects the BLM DWMA which lies directly south and west of the project site to Joshua Tree National Park and 2) tortoise were found on the Desert Sunlight project site directly to the north of this project. The Project would directly, indirectly and cumulatively impact desert tortoise, including habitat loss, habitat disturbance, and habitat fragmentation. EIS must also consider impacts to connectivity between desert tortoise populations.
- The EIS must minimize any impacts to desert tortoise that it finds are unavoidable, mitigation should limit the ground disturbing activities from the project and limit access roads to the project. Mitigation should include ecological restoration, construction of vehicle barriers and education programs designed to improve desert tortoise habitat and population viability.
- EIS should discuss mitigation ratios for tortoise habitat and how they relate mitigation ratios recommended by agencies and mitigation ratios used for other renewable projects in California and Nevada. Five to one mitigation of all acres of desert tortoise habitat destroyed was recommended. Desert tortoise habitat lands should be acquired within the affected Eastern Colorado Recovery Unit.
- EIS should address desert tortoise translocation. The CDCA Plan does not consider large-scale desert tortoise translocation. The BLM would need to amend the CDCA Plan or develop a desert tortoise translocation plan if project moves forward. Translocation plan must be developed in accordance with BLM Handbook 1745 requirements. Monitoring of the translocated and existing “host” tortoises needs to occur for long enough to realistically evaluate success of the translocation. Success criteria for translocation must be clearly identified. Temporary project sites need to be fenced with tortoise proof fencing during construction and the permanent project sites need to be fenced to prevent tortoise mortality. All associated roads need to be fenced.
- EIS should use the recently released USGS desert tortoise habitat model to determine likely changes in desert tortoise habitat quality in the area and the importance of the desert tortoise habitat due to climate change.
- **Other species.** Project site is located between Eagle Mountains and Coxcomb Mountains bighorn sheep deems and may provide connectivity between the two. EIS should consider direct, indirect, and cumulative impacts to this species.
- EIS should consider other state protected species, NECO special status species and BLM sensitive species of wildlife occur on the project or in the vicinity including the Palm Springs round-tailed ground squirrel (*Spermophilus tereticaudus chlorus*), Mojave fringe-toed lizard (*Uma scoparia*), chuckwalla (*Sauromalus ater*), California leaf-nosed bat (*Macrotus californicus*), Pallid bat (*Antrozous pallidus*), other rat bat species, American badger (*Taxidea taxus*), mountain lion (*Puma concolor*), burro deer (*Odocoileus hemionus eremicus*), and Desert Leafcutting Ant (*Acromyrmex versicolor*).

- EIS should evaluate the impacts on locally rare species (not merely federal- and state-listed threatened and endangered species). The preservation of regional and local scales of genetic diversity is very important to maintaining species in perpetuity especially in light of global climate change. All species found at the edge of their ranges or that occur as disjunct locations be evaluated for impacts by the proposed permitted activities.
- **Invasive Weeds.** EIS must consider the impacts of the project on invasive weeds and should consider how invasive plants and weeds will be managed and controlled from the initial ground disturbance. EIS should include an invasive species management plan to monitor and control noxious weeds. Invasive weeds include Russian thistle (*Salsola tragus*), Sahara mustard (*Brassica tournifortii*), red brome (*Bromus rubens*), and orchardgrass (*Dactylis glomerata*). EIS must consider invasive weeds along linear facilities.
- EIS should consider impacts of any herbicides used for weed control, including Roundup.
- **Other.** EIS should consider impacts to biological soil crusts including means of mitigating for the impacts.
- EIS should discuss impacts associated with fencing around the project site(s) and consider options with fewer impacts.
- EIS should discuss impacts associated with an increase of shade in the desert environment. EIS should address the temperature change in the area with the increase of shade due to panels and the removal of existing trees.
- The site has potential to be sited on the sand transport corridor that originates in Joshua Tree National Park, through the Palen and Ford Dry Lake Valleys, across Interstate 10 to the agricultural areas adjacent to Blythe. This corridor provides sand habitat for a suite of sand-specialists, including the Mojave fringe-toed lizard. Disruption to the sand transport corridor should be identified, minimized and analyzed.

Climate Change

- EIS should consider how climate change could influence the Project in sensitive areas and assess how Project impacts could be exacerbated by climate change.
- EIS should disclose anticipated benefits of solar energy including quantifying the greenhouse gas emissions from different types of generating facilities and comparing these values.
- In addition to addressing climate change in the cumulative effects analysis, the EIS should address the carbon footprint of the project and any losses to carbon storage and sequestration it will engender.
- The EIS should evaluate specific mitigation measures to reduce greenhouse emissions from mobile sources.
- Transmission line upgrades and new transmission facilities may increase the use of the greenhouse gas called SF6; EIS should provide an analysis of the amount of SF6 gases that would be released by this project.

Cultural Resources

- Native American Heritage Commission conducted a Sacred Lands File search of its Inventory and Native American cultural resources were not identified in the project area. However, early consultation with Native American tribes is recommended and may provide additional information of sites. A list of Native American contacts in Riverside County was provided.

- EIS should describe process and outcome of government-to-government consultation between BLM and each tribe government in the Project area, issues that were raised and how those issues were addressed in the alternatives.
- EIS should describe the existence of Indian sacred sites in the project areas, Executive Order 13007 and discuss how the BLM will avoid adversely affecting physical integrity, accessibility, or use of sacred sites if they exist in the area. EIS should summarize coordination with Tribes and SHPO/THPO including identification of NRHP eligible sites and development of a Cultural Resources Management Plan.
- La Cuna de Aztlan Sacred Site Protection Circle is comprised of 15 Native American individuals dedicated to protecting Sacred Sites including the Blythe Giant Intaglios, geoglyphs, and other sacred sites along the Colorado River. La Cuna de Aztlan is against the project because it would impact Native American Sacred Sites that are protected under State, federal, county, and international law. It will also impact animals that are sacred to indigenous nations, including the desert tortoise and horny toad. La Cuna de Aztlan offered to give tours to archaeologists and anthropologists interested in visiting the sites.
- EIS should address the cumulative impacts to Native American cultural sites due to the large numbers of renewable energy projects. EIS should analyze impact to tribal use of the land including the Spiritual Run, cremations, and dance patterns.
- Consultation with the Information Center of the California Historic Resources Information System of the State Historic Preservation Office is recommended.
- Lead Agencies should consider avoidance of cultural resources that are discovered.
- NEPA regulations provide for accidental discovery of archaeological resources and mandate processes in the event of an accidental discovery of human remains. California Government Code §27460 should be followed in the case of an accidental discovery of human remains during groundbreaking activity. California Government Code §27491 and California Health & Safety Code §7050.5 may apply.

Fire and Fuels Management

- EIS should address wildfire risks for each project alternative. Wildfires are becoming common in the Mojave Desert facilitated by the spread of invasive weeds and climate change. Wildfires can result in type conversion of large expanses of habitat. Wildfires could be caused by construction or operation of the transmission lines and development of roads which could encourage increased motorized vehicle access and increase fire risk.
- Fire study on panels should include panels in a diagonal position.

Land and Realty

- EIS should discuss the Desert Renewable Energy Conservation Plan and the Solar Programmatic EIS including up to date maps illustrating current boundaries and alternatives and acknowledge the requirements and/or conditions that may apply.

- EIS should discuss how the proposed action would support or conflict with objectives of federal, state, tribal, or local land use plans, policies, and controls in the project areas.
- EIS should discuss any potential land use conflicts between the Proposed Action and the proposed Eagle Mountain Pumped Storage Project. Eagle Mountain Pumped Storage Project EIS recommended a transmission route that would parallel the SCE transmission line that crosses the southwestern parcel of the project site.
- EIS should discuss the land use conflicts between the Proposed Action and the existing rural populations in the vicinity.
- BLM should explain what its duties are and how it manages the land it has in the Desert.
- EIS should explain the role of the County of Riverside and the California Environmental Quality Act.
- National Parks Conservation Association is concerned that the Proposed Action does not comply with the February 24, 2011 National Park Service/BLM Memo regarding development of renewable energy in the Eagle Mountain area on Bureau of Land Management Land.

Recreation

- EIS should consider impacts to Joshua Tree National Park, including cumulative impacts from Desert Sunlight Solar Project.
- EIS should consider impacts to the Lake Tamarisk recreational opportunities including the golf course, bike riding, walking, and ATVing.

Social and Economics

- Construction of this project would bring hundreds of new people to the Desert Center area. EIS should consider law enforcement problems, including illegal off-roading, vandalism to private property, harassment of wildlife and other undesired behavior.
- EIS should address impacts to housing because no local housing exists for the proposed construction workforce. Use of shuttle buses for construction workers will impacts local roads.
- EIS should address impacts to property values and future real estate potential of the local community.
- EIS should address what, if any, benefits would the local community receive from the project. The local community will be most impacted by the project.
- EIS should consider impacts to utilities in the local communities. The Desert Sunlight Solar Project construction is already using the few utilities available. This results in an impact to existing infrastructure and Desert Center does not have a city government or funding to improve this infrastructure.
- EIS should describe outreach to all communities affected by the project as rural communities may be most vulnerable to health risks associated with the project. The Proposed Action would be located near the community of Desert Center which has one major solar project being constructed on nearby public lands. This project will further restrict access to public lands by members of the community who would bear the brunt of any visual impacts, impacts

to water resources, impacts to other resources, and the consequences of the industrialization of this relatively rural community.

Environmental Justice

- EIS should include evaluation of environmental justice populations within the geographic scope of the project and address disproportionate adverse impacts to minority or low-income populations in addition to the approaches used to foster public participation of these populations.

Water Resources

- EIS should discuss the amount of water required for the Proposed Action and water source(s), including potential impacts to source(s) from climate change. Should include a qualitative discussion of impacts to water supply and adaptability of the project to these changes.
- Analysis of impacts to groundwater basin should include cumulative water use for nearby energy projects and impacts to the Pinto Basin beneath the Joshua Tree National Park.
- EIS should discuss impacts to the groundwater basin including assumptions about the number of acre feet already allocated, annual recharge rates, water permitting process, and status of water rights in the basin, including over-allocation of water. EIS should characterize functions of aquatic features that could be affected by the Proposed Action.
- Commenter offered for the Applicant to use their water well and monitoring wells to do a baseline study for groundwater availability.
- Discussion regarding non-groundwater sources of water, including potable water, irrigation canal water, wastewater, or deep-aquifer water.
- EIS should discuss effects of water discharge on surface water quality, identify specific discharges, and if a zero-discharge facility, disclose how water would be disposed of onsite.
- EIS should include all water conservation measures that will be implemented to reduce water demands. Project design should maximize water conservation measures.
- EIS should minimize impacts to water: avoid placement of structures in washes, utilize natural drainage channels, use natural washes for flood control, minimize road crossings over washes, and avoid complete clearing and grading of site.
- EIS should describe natural drainage pattern on site and identify if project components are within the 50- or 100-year floodplain.
- EIS should consider upstream and downstream reach of waters and their importance to the landscape. Potential damage to washes includes alterations to the hydrological functions that natural channels provide in arid ecosystems, including capacity for flood control, energy dissipation, and sediment movement.
- *Clean Water Act Section 404.* EIS should include jurisdictional delineation for all waters of the United States including ephemeral drainages, to confirm presence or absence of waters of the United States. Discussion should include figures of the waters, acreages, channel lengths, habitat types, values, and functions. If a Section 404 permit is required, EPA will review the project for compliance with Section 404(b)(1) Guidelines.

- EIS should determine if a California State Water Resources Control Board General Permit for Discharges of Storm Water Associated with Construction Activity and Storm Water Pollution Prevention Plan (SWPPP) will be required. SWPPP should include Best Management Practices, including for erosion control and monitoring.

Solid and Hazardous Wastes

- EIS should address potential direct, indirect, and cumulative impacts of hazardous waste from construction and operation including herbicides and pesticides, waste types, volumes, and expected storage, disposal, and management plans. Appropriate mitigation should be included, and alternate processes using less toxic materials should be evaluated.
- The Applicant should address full life cycle including reuse and recycling of panels.
- EIS should consider potential Cadmium-Telluride (CdTe) pollution events and impacts on public health, water resources and flora and fauna.
- EIS should include breakage and failure rate from other CdTe power plants to get a better approximation of how often breakage occurs on site. How are panels inspected for breakage, what criteria are used to determine a panel is broken. EIS should consider recent result regarding leaching potential of CdTe from broken PV modules and PV placed in landfills.
- EIS should review databases of regulatory agencies to determine if the project would pose a threat to human health or the environment.
- EIS should identify the mechanism to initiate any required investigation and/or remediation for any site within the area that may be contaminated and the government agency to provide regulatory oversight.
- Any Phase I or Phase II Environmental Site Assessment Investigations should be summarized, all sampling results in which hazardous materials were found above regulatory standards should be clearly summarized. All closure, certification, or remediation approval reports should be included in the EIS.
- If buildings or other structures are being demolished an investigation should be conducted for the presence of hazardous chemicals, mercury, and asbestos and the chemicals should be remediated in compliance with California environmental regulations and policies.
- Sampling of soil may be required; if soil is contaminated it must be disposed of appropriately.
- If a health risk assessment is required, it should be overseen and approved by the appropriate government agency to determine if there are, have been, or will be releases of hazardous materials that may pose a risk to human health and the environment.
- If the site was used for agriculture, agriculture related residue may be present and proper investigation and remedial actions should be conducted.
- If hazardous wastes are, or will be, generated by the proposed operations the wastes must be managed in accordance with California law and regulations. The facility should also obtain a United States Environmental Protection Agency Identification Number. Certain hazardous wastes are also regulated by the local Certified Unified Program Agency.

- Department of Toxic Substances Control can provide cleanup oversight through an Environmental Oversight Agreement for government agencies or a Voluntary Cleanup Agreement for private parties.

Visual Resources

- EIS should fully review the impacts of each alternative on visual resources including the effects on wilderness character and values.
- EIS should include Key Observation Point simulations that depict all visual impact scenarios. BLM required factors should be considered: angle of observation, length of time project is in view, and relative size or scale. Key Observation Points were recommended.
- EIS should identify what steps will be taken to mitigate and minimize light pollution and fugitive dust that could harm Joshua Tree National Park's night sky resources.
- EIS should design steps to minimize the Proposed Action's form, line and color from mountainous viewing points within wilderness or Joshua Tree National Park.

Cumulative Impacts

- EIS should consider cumulative impacts by identifying condition of resource as a measure of past impacts, identify the trend in the condition of the resource as a measure of current impacts, identify all on-going, planned and reasonably foreseeable projects in the study area, and identify the future condition of the resource from reasonably foreseeable projects or actions. The EIS should assess the contribution of the proposed alternatives and provide a specific measure for the project impact; if cumulative impacts are identified mitigation should be proposed.
- BLM should conduct a regional assessment of resource impacts, given the number of project planned in the region, including energy projects, off road vehicle activity and mining.
- EIS should describe reasonably foreseeable future land use and associated impacts that result for additional power supply. EIS should estimate the amount of growth, the likely location, and biological and environmental resources at risk.
- BLM should consider the ecological condition and trend of lands and biological resources within the western Chuckwalla Valley. The analysis should consider the adverse impacts from the recently approved 4,000 acre Desert Sunlight solar project as well as the potential impacts from pending applications in this region on both private and public lands. BLM needs to establish the carrying capacity for renewable energy in this area.

3.2 Alternative Development and/or Alternative Design Criteria

- The analysis should discuss the types of panels that would be used including the efficiencies of the panels. Alternatives should address the actual amount of energy generated by the panels including the energy loss due to transmission.
- The analysis should describe approach used to identify environmentally sensitive areas and describe the process used to designate them in terms of sensitivity. The DEIS should provide a clear discussion of reasons for elimination of alternatives not evaluated in detail.

- EIS should include alternatives not within the jurisdiction of the lead agency as mandated by NEPA; there are no mandates that state that BLM cannot consider an off-site alternative to an individual project like the Desert Harvest Project.
- Alternatives should include provisions for conserving at-risk species, such as the Desert tortoise, which would allow BLM to address, in part, its obligation under Section 7(a)(1) of the Endangered Species Act. Such alternatives should include conservation actions recommended by the FWS in recent biological opinions for large-scale solar projects in this planning area.
- Encourages the BLM and other parties to pursue siting of renewable energy projects on disturbed, degraded, or contaminated sites including fallow or abandoned agriculture lands over undisturbed public lands.
- Alternatives should be presented in comparison form, sharply defining issues and providing clear basis for choice among options by decision maker and public. Environmental effects of each alternative should be quantified as much as possible.
- EIS should analyze an environmentally preferred alternative that should consider options such as downsizing the project or relocating sections of the project on private land to avoid impacts.
- Comments recommended the following alternatives:
    - An alternative that uses a common gen-tie line alignment, right-of-way, and access roads and shared the northernmost boundary security fencing.
    - A desert or ephemeral wash avoidance alternative.
    - An alternative that mounts PV arrays at a height that would maintain natural vegetation and preserve natural drainages.
    - The No Action Alternative.
    - An alternative on public lands that are not desert tortoise habitat.
    - An alternative on private lands including the disturbed agriculture land around Desert Center.
    - An alternative where power generation is sited adjacent to power consumption.
    - A distributed generation alternative. Distributed generation would have fewer environmental costs including reducing the natural carbon-storing ability of healthy desert ecosystems, disturbing biological soil crusts, and degrading and fragmenting habitats of protected, sensitive, and rare species.
    - An alternative that removes the southwestern portion of the project to avoid Emory's crucifixion thorn (*Castela emoryi*).
    - An alternative that makes the proposed site unavailable for energy development.
    - An alternative that avoids the Desert Dry Wash Woodland habitat.
    - An alternative that avoids project siting within the WHMA.
    - An alternative that would reduce impacts to the Joshua Tree National Park.

3.3 Issues or Concerns Outside the Scope of the EIS

- A master comprehensive plan should exist before large expensive inefficient solar plants are sited and built out in the wildlands. This plan should carefully analyze the recreational and biodiversity resources of the Mojave Desert.

- The renewable resources of the CDCA should be developed through comprehensive, pro-active planning involving federal, state and local governments to identify the most appropriate areas for such development and to guide development to those areas.
- BLM's process in authorizing the proposed project is flawed. BLM relies on developer-initiated siting rather than agency-guided siting for development of renewable energy projects.
- A commenter wondered whether the company was going to get government approval and then just sell the project to somebody else.

Bureau of Land Management

Public Scoping Meeting

Desert Harvest Solar Project EIS

Palm Desert, CA – October 3, 2011

Note: Before including your address, telephone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you may ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from individuals identifying themselves as representatives or officials of organizations or businesses will be made available for public inspection in their entirety.

SIGN-IN SHEET

Presentation starting promptly at 1:30 PM

NAME	AFFILIATION	MAILING ADDRESS, incl ZIP —— please print clearly ——	PHONE	EMAIL ADDRESS —please print clearly—	Do you want to be on our Mailing List?
Rebecca Forbes	CalTrans	464 West 4th St. MS-722 San Bernardino, CA 92401	909 388-7139	rebecca_forbes@dot.ca.gov	yes
ELIZABETH MEYERHOFF	HMCG for Eagle Crest Energy	42955 Connecticut Palm Desert CA 92211	760 4497659	elizabeth@ harvey- meyerhoff.com	yes
Patricia Pinon	La Cuna de Aztlan Sacred Sites Protection Circle	424 N. Carlton Blythe CA	760 922-6422	patricuna@ msn.com	
Ollie Boyd		P.O Box 1282 PS CA 92263	760 534-4119	ollie.boyd@ bia.gov	Yes
PHILIP LUONG	Lakeview Ranch	P O BOX 1751 MONTEREY PARK, CA 91754	(213)810-1111	LAKEVIEW.RANCH @YAHOO.COM	Yes

Bureau of Land Management

Public Scoping Meeting

Desert Harvest Solar Project EIS

Palm Desert, CA – October 3, 2011

Note: Before including your address, telephone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you may ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from individuals identifying themselves as representatives or officials of organizations or businesses will be made available for public inspection in their entirety.

SIGN-IN SHEET

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NAME	AFFILIATION	MAILING ADDRESS, incl ZIP —— please print clearly ——	PHONE	EMAIL ADDRESS —please print clearly—	Do you want to be on our Mailing List?
Ulrich Sauerbrey	Consultant	71943 Live oak st Indian Wells CA 92210	760 610 9410	ulrichs@uslandlink	~~No~~ Yes

JSLANDLINK

lrich J. Sauerbrey
esident

: (760) 610-9410
: ulrichs@uslandlink.com

d | project management and engineering

Speaker Registration Card

(Please Print)

Name: Patricia Piñon

Affiliation (if any): La Cuna de Aztlan Sacred Sites Protection Circle

Address: 424 N. Carlton

City, State, and Zip: Blythe, CA

Phone: 760 922-6422

Email: paticuna@msn.com

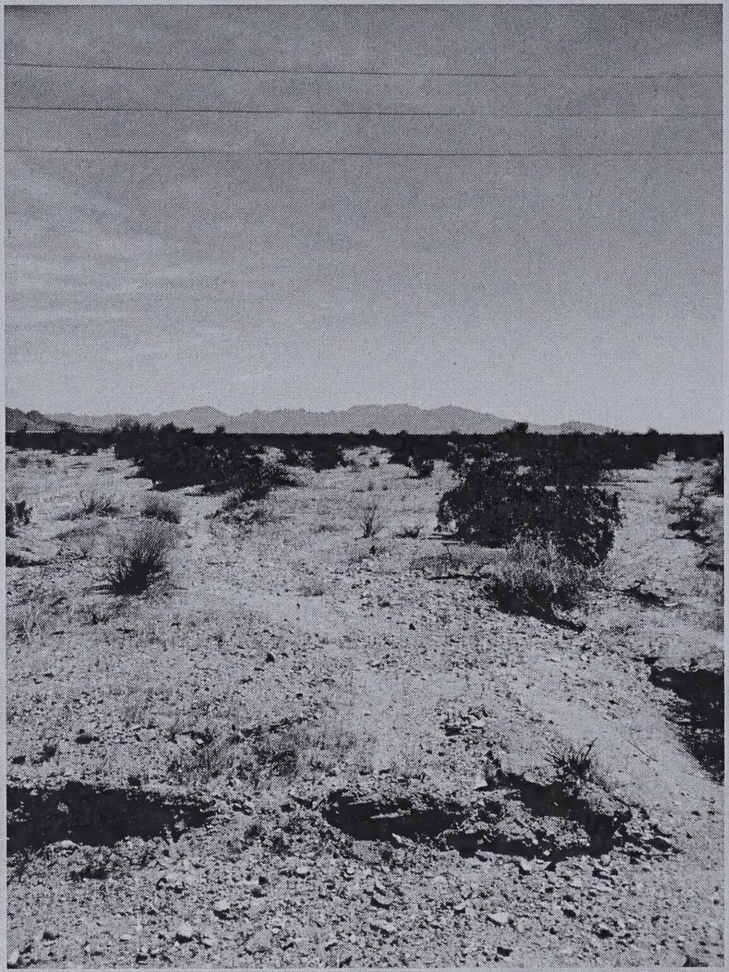
☐ Joshua Tree ☐ Lake Tamarisk ☑ Palm Desert

Thank you for coming to the
enXco Desert Harvest Solar Project EIS
Public Scoping Meetings

- **Please…**
  - Sign in at the table near the entrance
  - Fill out and turn in speaker cards to make verbal comments
  - Pick up comment cards to make written comments
    - Drop off at the end of the meeting, or
    - Mail or fax the card later
  - **Scoping Period Ends October 15, 2011**

Agenda

- First 30 minutes **Open House**
- Next 30 minutes **Presentation**
- Last 1 hour **Public Comments**



Who Are We?

- **Bureau of Land Management (BLM)**
  - **Lynnette Elser,** Project Manager and NEPA Coordinator, California Desert District
- **enXco Development**
  - **Ian Black,** Project Manager
- **Aspen Environmental Group**
  - **Marisa Mitchell,** third party consultant to BLM

Why Are We Here?

The Purpose of Public Scoping

- Give a project overview
- Solicit public feedback
- Use this feedback to write the Draft EIS

enXco Desert Harvest Solar Project

The Bureau of Land Management (BLM) presents:

Public Scoping Meetings
for the
EIS/Plan Amendment

MEETING LOCATIONS

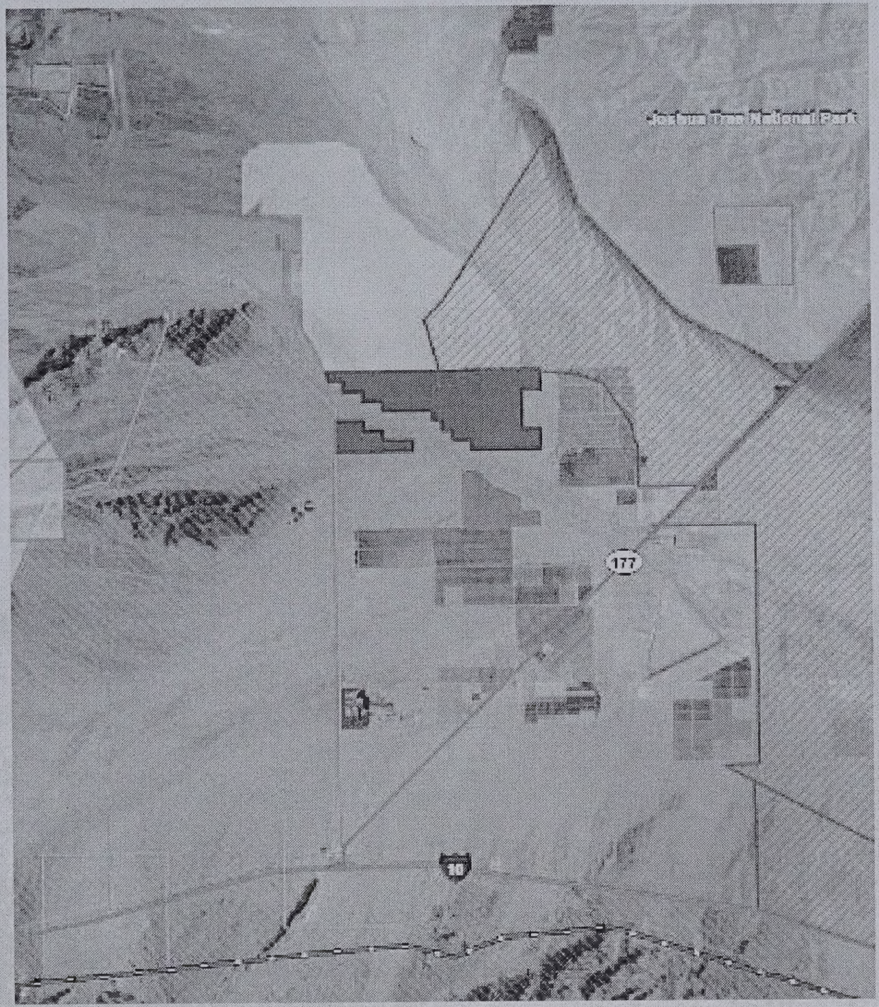
Monday, October 3, 2011
1pm to 3pm
University of Riverside, Palm Desert Graduate Center
75080 Frank Sinatra Drive
Palm Desert, CA 92211

Monday, October 3, 2011
6pm to 8pm
Lake Tamarisk Clubhouse
26251 Parkview Drive
Desert Center, CA 92239

Thursday, October 6, 2011
6pm to 8pm
Joshua Tree Community Center
6171 Sunburst Street
Joshua Tree, CA 92252

Project Overview

BLM's Purpose and Need: Responding to an application



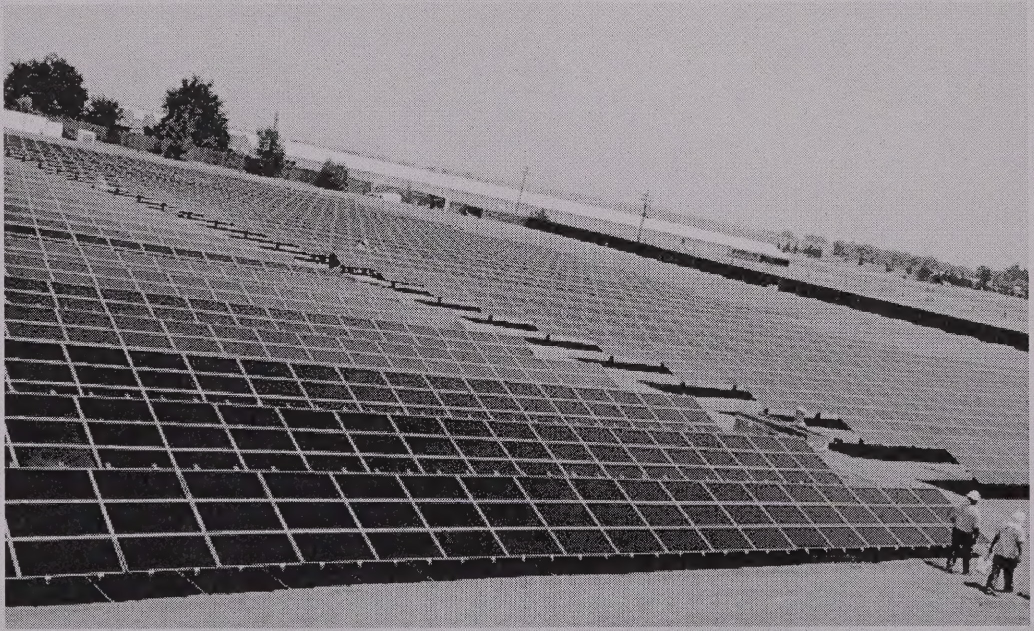
Project Overview

roject Location

1,209 acres on BLM land

North of Desert Center

South of First Solar's Desert
;unlight Project (under construction)



roject Features

1,200 acre solar field

On-site electrical substation

Internal access roads

Security fencing and lighting

:onstruction
rocess

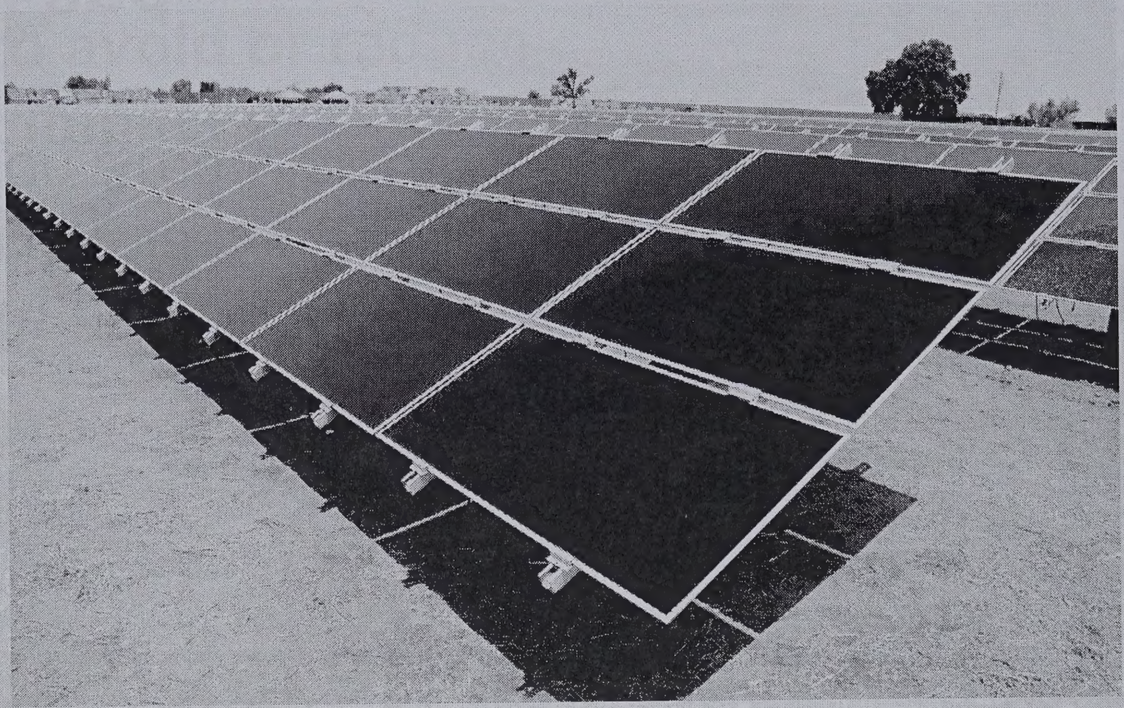
Constructed in 2 phases
18 months of total construction time

Project Gen-Tie

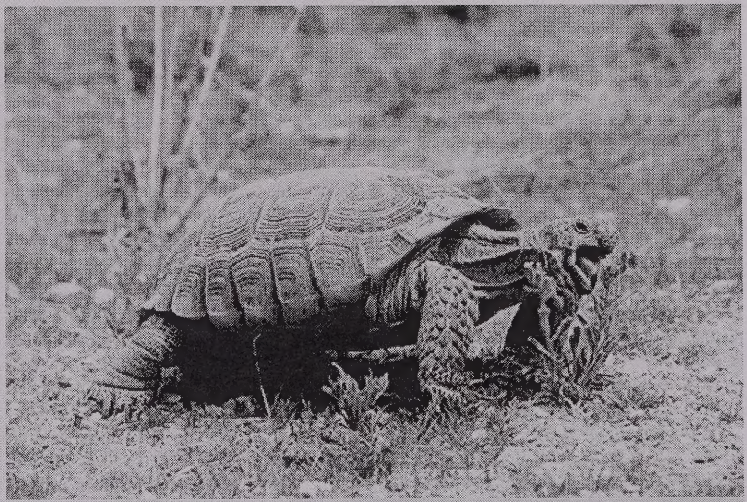
- Considering shared or project-specific gen-tie

Environmental Review

- The Bureau of Land Management (BLM) is the NEPA lead agency
- The National Parks Service is a Cooperating Agency
- Riverside County is the CEQA Lead Agency



Agency Actions Under Consideration



BLM:

- Right-of-Way Grant
- Amendment to California Desert Conservation Area Plan (CDCA)

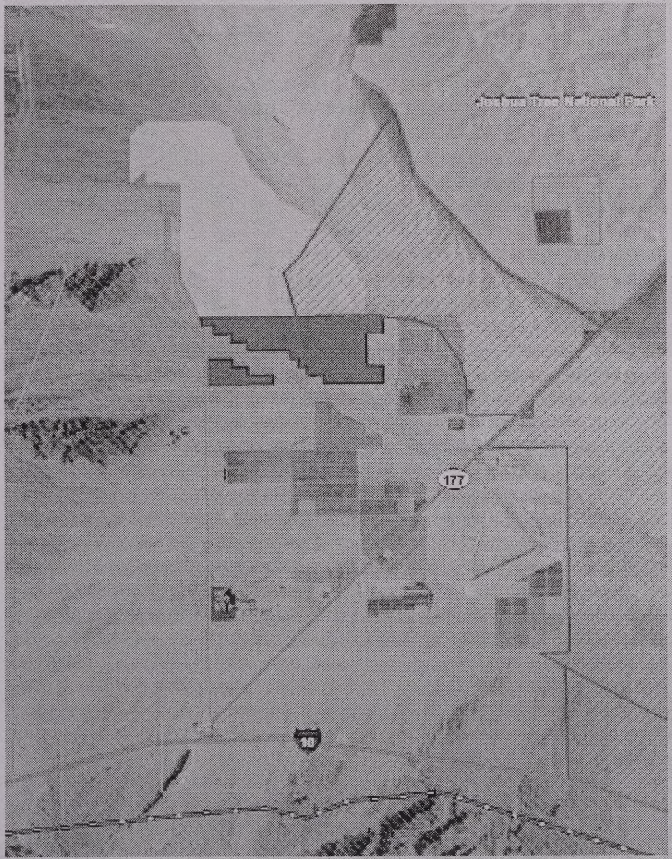
Riverside County and California Dept of Fish and Game may use Final EIS to issue permits

NEPA Objectives

- Identify key issues to focus analysis
- Identify reasonable alternatives for analysis
- Present environmental impacts of proposed project and alternatives
- Identify ways to avoid or reduce environmental impacts
- Inform the agency decision-making process
- Encourage public participation

Preparation of the EIS

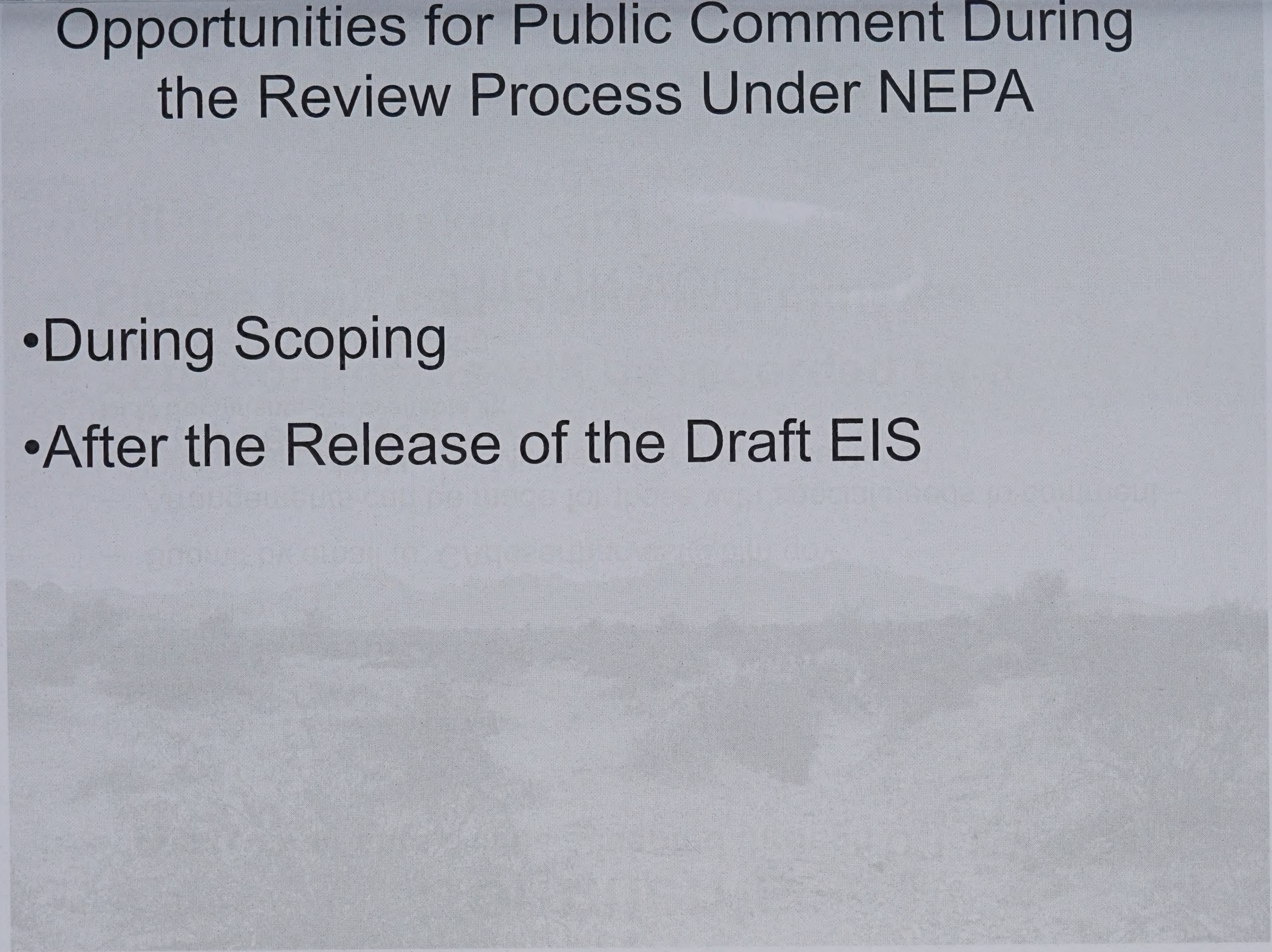
(Six Stages)

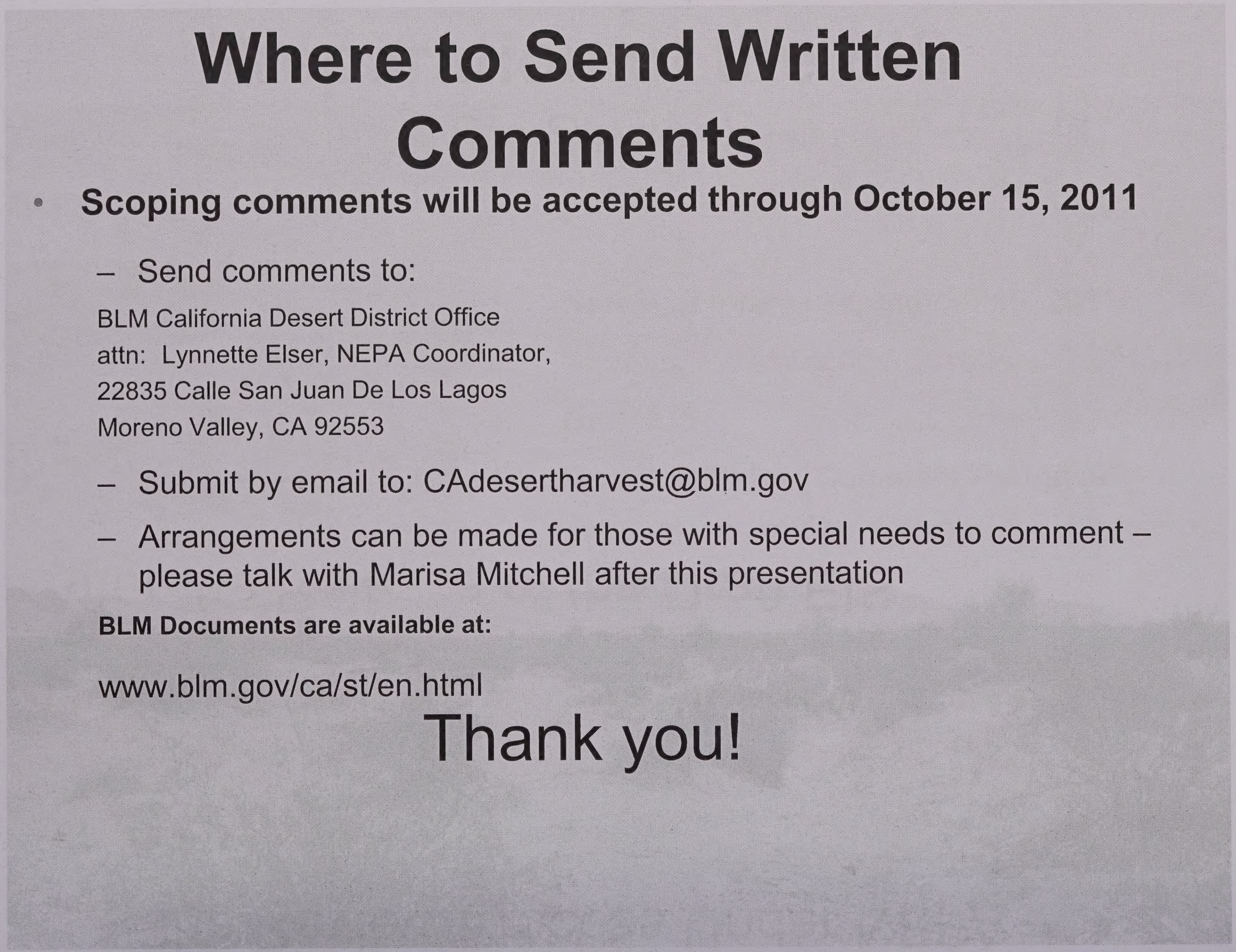


1. **Notice of Intent** (September 15, 2011)
2. **Scoping Period** (ends October 15, 2011)
3. **Draft EIS**
4. **Draft EIS Public Comment Period** (90 days; public review planned for Winter of 2011)
5. **Final EIS** (Summer of 2012)
6. **Record of Decision** (Summer of 2012)

Opportunities for Public Comment During the Review Process Under NEPA

- During Scoping
- After the Release of the Draft EIS





Where to Send Written Comments

- **Scoping comments will be accepted through October 15, 2011**
  - Send comments to:

BLM California Desert District Office
attn: Lynnette Elser, NEPA Coordinator,
22835 Calle San Juan De Los Lagos
Moreno Valley, CA 92553

  - Submit by email to: CAdeserthavest@blm.gov
  - Arrangements can be made for those with special needs to comment – please talk with Marisa Mitchell after this presentation

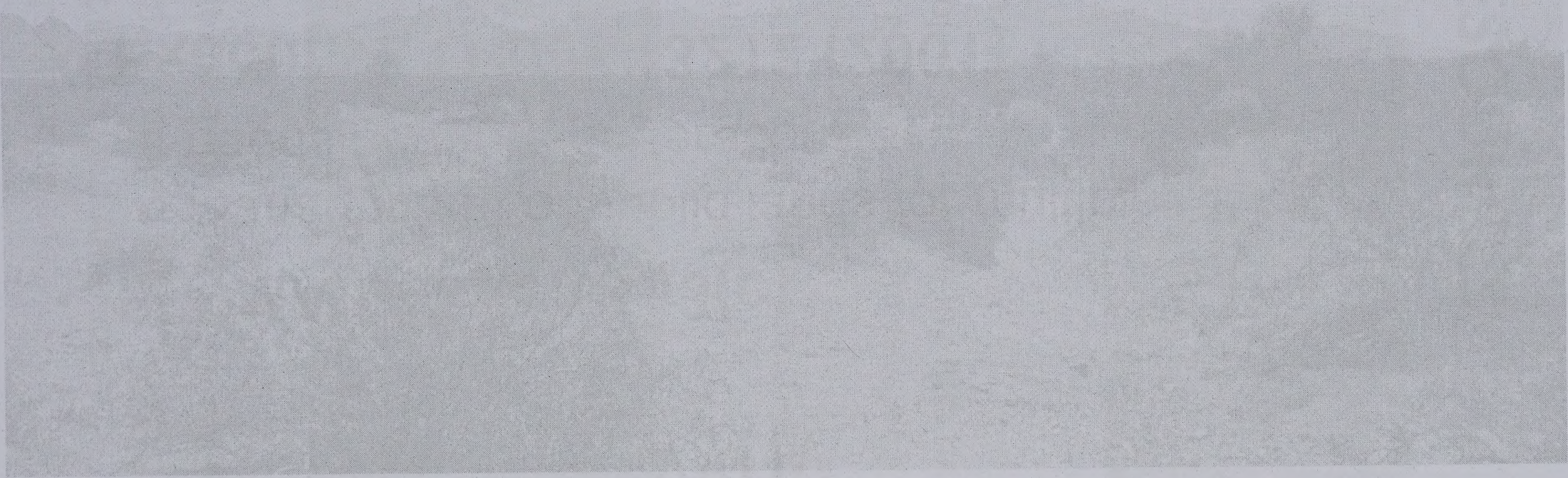
BLM Documents are available at:

www.blm.gov/ca/st/en.html

Thank you!

Public Comment Period

- Fill out a speaker card
- Please limit comments to 3 minutes
- Your comments will be recorded by a court reporter

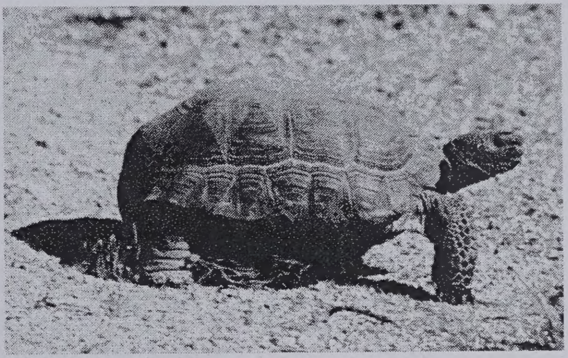


Why

- **FLPMA Section 103(c)**
  - Management of public lands for multiple use, incl. needs of future generations
- **Executive Order 13212 (2001)**
  - Federal agencies act expediently to increase environmentally sound energy
- **Energy Policy Act (2005)**
  - Interior Dept. goal to approve 10,000 MW renewable energy on public lands by 2015
- **Secretarial Order 3285A1 (2010)**
  - Prioritizes renewable energy development as a priority for Dept. of Interior

Desert Harvest Solar Farm Project

BIOLOGICAL RESOURCES



Desert Tortoise

The project site is habitat for desert tortoise. Surveys of the project site found:

- No living tortoises on site
- Some tortoise sign

Golden Eagle

The project site is foraging habitat for the golden eagle. Surveys of the project site found:

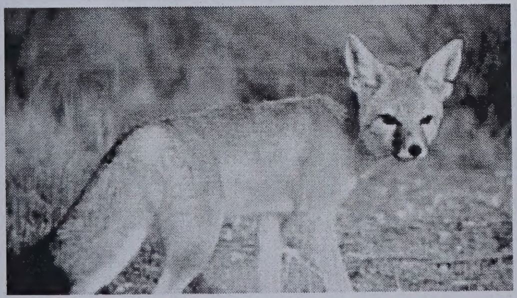
- No active nests within a 10-mile radius of the project site

Photograph by Jim Rorabaugh, USFWS

Mojave Fringe-Toed Lizard

Mojave fringe-toed lizard habitat occurs in the Chuckwalla Valley. Surveys of the project site found:

- No habitat for Mojave fringe-toed lizard on the project site



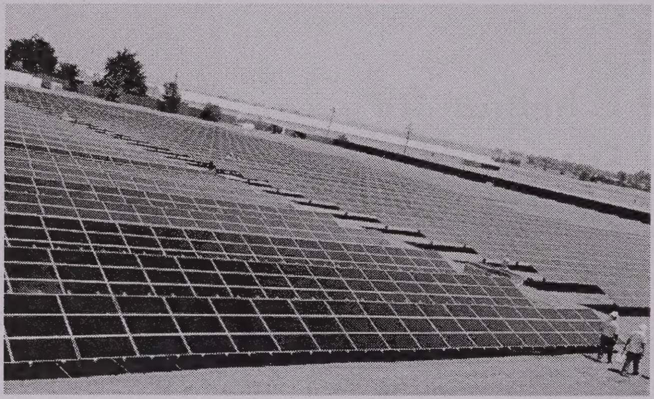
Desert Kit Fox and American Badger

Surveys of the project site found:

- Desert kit fox and American badgers occur on site

Desert Harvest Solar Farm Project

PROJECT OVERVIEW



Project Location
- 1,209 acres on BLM land
- North of Desert Center
- South of First Solar's Desert Sunlight Project (under construction)

Project Features
- 1,200-acre solar field
- Ono-site electrical substation
- Internal access roads
- Security fencing and lighting

Construction Process
- Constructed in 2 phases
- 18 months of total construction time

Project Gen-Tie
- Considering shared or project-specific gen-tie

Desert Harvest Solar Farm Project

CULTURAL RESOURCES

- Class III cultural resources surveys complete
- Cultural Resources Report is under preparation
- enXco has carried out informal meetings with tribes
- Formal tribal consultation will be carried out as a part of the NEPA process

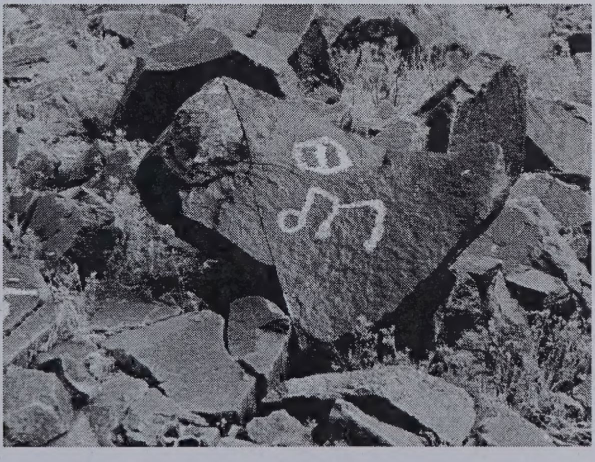
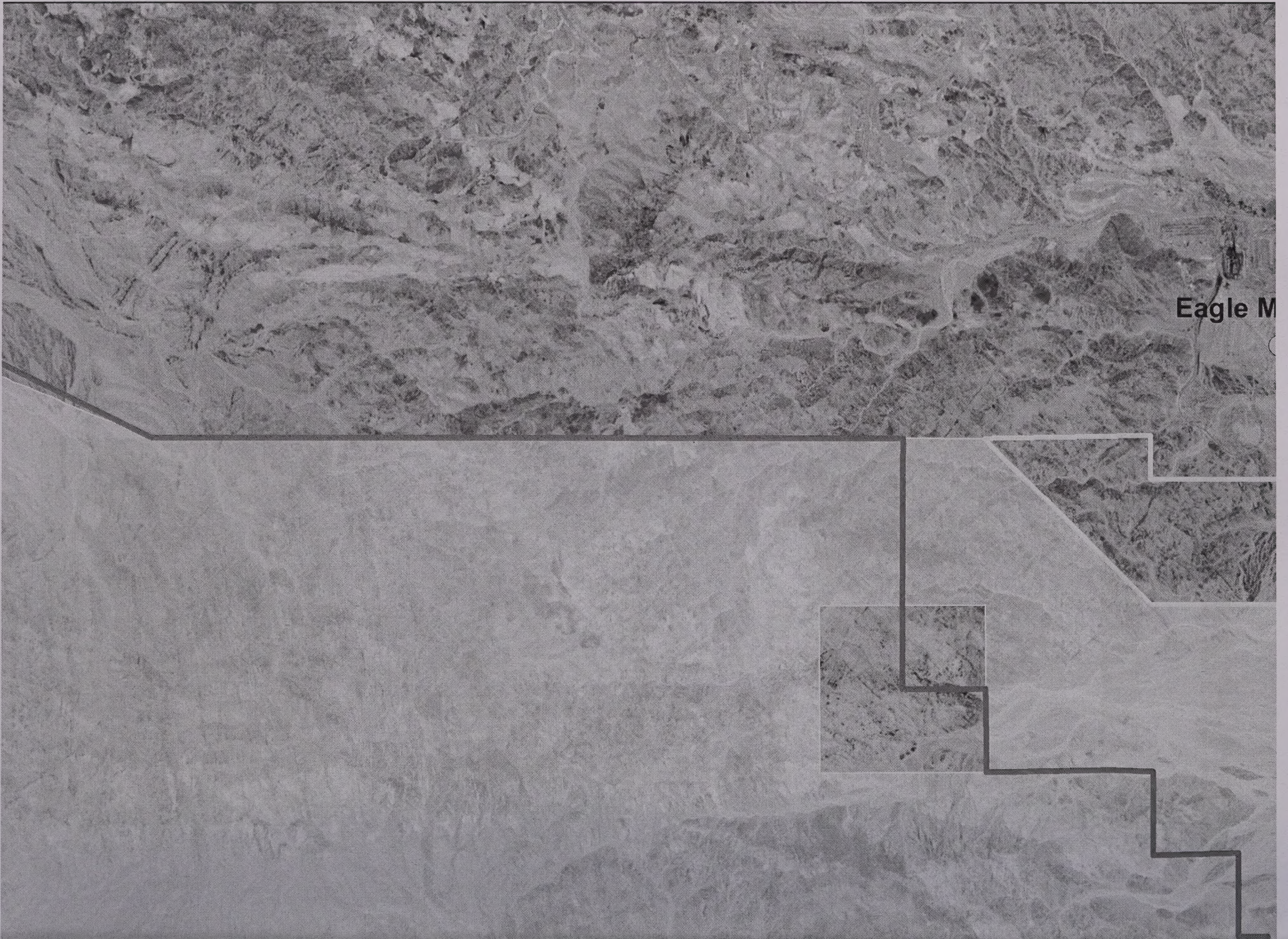


Photo: George Kline, BLM (Artifact NOT


Eagle M

STATE OF CALIFORNIA
Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
e-mail: ds_nahc@pacbell.net

RECEIVED
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CALIF. DESERT DISTRICT
MORENO VALLEY, CA

October 5, 2011

Ms. Lynnette Elser
United States Department of the Interior
Bureau of Land Management
22835 Calle San Juan de Los Lagos
Moreno Valley, CA 92553

Re: SCH#2011094004; NEPA Notice of Intent (NOI) to prepare a Draft Environmental Impact Statement (DEIS) Request for the **"Desert Harvest Solar Farm Project;"** located in the Chuckwalla Mountains near the Community of Desert Center; eastern Riverside County, California.

Dear Ms. Elser:

The Native American Heritage Commission (NAHC) is the California State 'Trustee Agency' pursuant to Public Resources Code §21070 for the protection of California's Native American Cultural Resources. The NAHC is also a 'reviewing agency' for environmental documents prepared under the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq*), 36 CFR Part 800.3, .5 and are subject to the Tribal and interested Native American consultation as required by the National Historic Preservation Act, as amended (Section 106) (16 U.S.C. 470; Section 106 [f] 110 [f] [k], 304). The provisions of the Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. 3001-3013) and its implementation (43 CFR Part 10.2), and California Government Code §27491 may apply to this project if Native American human remains are inadvertently discovered.

The NAHC is of the opinion that the federal standards, pursuant to the above-referenced Acts and the Council on Environmental Quality (CSQ; 42 U.S.C. 4371 *et seq*) are similar to and in many cases more stringent with regard to the 'significance' of historic, including Native American items, and archaeological, including Native American items at least equal to the California Environmental Quality Act (CEQA.). In most cases, federal environmental policy require that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Statement (EIS).

The NAHC conducted a Sacred Lands File (SLF) search of its Inventory and Native American cultural resources were not identified in the project area you specified; early and quality consultation with the Native American on the attached list may provide detailed information of sites with which they are aware. The absence of archaeological resources does not preclude their existence.

The NAHC Sacred Lands File Inventory of the Native American Heritage Commission is established by the California Legislature pursuant to California Public Resources Code §§5097.94(a) and 5097.96. The NAHC, pursuant to Appendix B of the Guidelines to the California Environmental Quality Act (CEQA) is designated as the agency with expertise in the areas of issues of cultural significance to California Native American communities. Also, in the

1985 California Appellate Court decision (170 Cal App 3rd 604), the court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources, impacted by proposed projects including archaeological, places of religious significance to Native Americans and burial sites

Culturally affiliated tribes are to be consulted to determine possible project impacts pursuant to the National Historic Preservation Act, as amended. Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. The NAHC recommends as part of 'due diligence', that you also contact the nearest Information Center of the California Historical Resources Information System (CHRIS) of the State Historic Preservation Office (SHPO) for other possible recorded sites in or near the APE (contact the Office of Historic Preservation at 916-445-7000).

Attached is a list of Native American contacts is attached to assist you that may have knowledge of cultural resources in the project area. It is advisable to contact the persons listed and seek to establish a 'trust' relationship with them; if they cannot supply you with specific information about the impact on cultural resources, they may be able to refer you to another tribe or person knowledgeable of the cultural resources in or near the affected project area.

Lead agencies should consider avoidance, in the case of cultural resources that are discovered. A tribe or Native American individual may be the only source of information about a cultural resource; this is consistent with the NHPA (16 U.S.C. 470 *et seq* Sections. 106, 110, and 304) Section 106 Guidelines amended in 2009. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful

NEPA regulations provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery. Even though a discovery may be in federal property, California Government Code §27460 should be followed in the event of an accidental discovery of human remains during any groundbreaking activity; in such cases California Government Code §27491 and California Health & Safety Code §7050.5 may apply.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton
Program Analyst

Attachment: Native American Contacts list for Consultation

Native American Contacts
Riverside County
October 5, 2011

Cabazon Band of Mission Indians
David Roosevelt, Chairperson
84-245 Indio Springs Cahuilla
Indio , CA 92203-3499
(760) 342-2593
(760) 347-7880 Fax

Ramona Band of Cahuilla Mission Indians
Joseph Hamilton, Chairman
P.O. Box 391670 Cahuilla
Anza , CA 92539
admin@ramonatribe.com
(951) 763-4105
(951) 763-4325 Fax

Torres-Martinez Desert Cahuilla Indians
Mary Resvaloso, Chairperson
PO Box 1160 Cahuilla
Thermal , CA 92274
mresvaloso@torresmartinez.
(760) 397-0300
(760) 397-8146 Fax

Twenty-Nine Palms Band of Mission Indians
Darrell Mike, Chairperson
46-200 Harrison Place Chemehuevi
Coachella , CA 92236
tribal-epa@worldnet.att.net
(760) 775-5566
(760) 808-0409 - cell - EPA
(760) 775-4639 Fax

Joseph R. Benitez (Mike)
P.O. Box 1829 Chemehuevi
Indio , CA 92201
(760) 347-0488
(760) 408-4089 - cell

Chemehuevi Reservation
Charles Wood, Chairperson
P.O. Box 1976 Chemehuevi
Chemehuevi Valley CA 92363
chair1cit@yahoo.com
(760) 858-4301
(760) 858-5400 Fax

Fort Mojave Indian Tribe
Tim Williams, Chairperson
500 Merriman Ave Mojave
Needles , CA 92363
(760) 629-4591
(760) 629-5767 Fax

Colorado River Indian Tribe
Ginger Scott, Museum Curator; George Ray, Coor
26600 Mojave Road Mojave
Parker , AZ 85344 Chemehuevi
crit.museum@yahoo.com
(928) 669-9211-Tribal Office
(928) 669-8970 ext 21
(928) 669-1925 Fax

is list is current only as of the date of this document.

stribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, ction 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

is list is applicable for contacting local Native Americans with regard to cultural resources for the proposed CH#2011094004; NEPA Notice of Intent (NOI) to prepare a draft Environmental Impact Statement (DEIS) for the Desert Harvest Solar Farm Project; cated about 6 miles north of the Community of Desert Center in the Chckwalla Mountains of eastern Riverside County, California on federal Bureau

Native American Contacts
Riverside County
October 5, 2011

Torres-Martinez Desert Cahuilla Indians
Ernest Morreo
PO Box 1160 Cahuilla
Thermal , CA 92274
maxtm@aol.com
(760) 397-0300
(760) 397-8146 Fax

AhaMaKav Cultural Society, Fort Mojave Indian
Linda Otero, Director
P.O. Box 5990 Mojave
Mohave Valley AZ 86440
(928) 768-4475
LindaOtero@fortmojave.com
(928) 768-7996 Fax

Santa Rosa Band of Mission Indians
John Marcus, Chairwoman
P.O. Box 391820 Cahuilla
Anza , CA 92539
sestrada@
(951) 659-2700
(951) 659-2228 Fax

Augustine Band of Cahuilla Mission Indians
Mary Ann Green, Chairperson
P.O. Box 846 Cahuilla
Coachella , CA 92236
hhaines@augustinetribe.
(760) 398-6180
760-369-7161 - FAX

Morongo Band of Mission Indians
Michael Contreras, Cultural Heritage Prog.
12700 Pumarra Road Cahuilla
Banning , CA 92220 Serrano
(951) 201-1866 - cell
mcontreras@morongo-nsn.
gov
(951) 922-0105 Fax

Torres-Martinez Desert Cahuilla Indians
Diana L. Chihuahua, Vice Chairperson, Cultural
P.O. Boxt 1160 Cahuilla
Thermal , CA 92274
dianac@torresmartinez.
760) 397-0300, Ext. 1209
(760) 272-9039 - cell (Lisa)
(760) 397-8146 Fax

Cabazon Band of Mission Indians
Judy Stapp, Director of Cultural Affairs
84-245 Indio Springs Cahuilla
Indio , CA 92203-3499
markwardt@cabazonindia

(760) 342-2593
(760) 347-7880 Fax

Agua Caliente Band of Cahuilla Indians THPO
Patricia Tuck, Tribal Historic Perservation Officer
5401 Dinah Shore Drive Cahuilla
Palm Springs, CA 92264
ptuck@augacaliente-nsn.gov
(760) 699-6907

(760) 699-6924- Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2011094004; NEPA Notice of Intent (NOI) to prepare a draft Environmental Impact Statement (DEIS) for the Desert Harvest Solar Farm Project; ocated about 6 miles north of the Community of Desert Center in the Chckwalla Mountains of eastern Riverside County, California on federal Bureau

Native American Contacts
Riverside County
October 5, 2011

Augustine Band of Cahuilla Mission Indians
Karen Kupcha
P.O. Box 846 Cahuilla
Coachella , CA 92236
(760) 398-6180
916-369-7161 - FAX

Quenchan Indian Nation
THPO
P.O. Box 1899 Quechan
Yuma , AZ 85366
b.nash@quechantribe.com
(928) 920-6068 - CELL
(760) 572-2423

Ah-Mut-Pipa Foundation
Preston J. Arrow-weed
P.O. Box 160 Quechan
Bard , CA 92222 Kumeyaay
ahmut@earthlink.net
(928) 388-9456

Cahuilla Band of Indians
Luther Salgado, Sr., , Chairperson
PO Box 391760 Cahuilla
Anza , CA 92539
tribalcouncil@cahuilla.net
915-763-5549

Ernest H. Siva
Morongo Band of Mission Indians Tribal Elder
9570 Mias Canyon Road Serrano
Banning , CA 92220 Cahuilla
siva@dishmail.com
(951) 849-4676

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STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

NEPA Notice of Intent
Review and Comment by State Agencies

September 29, 2011

To: Reviewing Agencies

Re: Desert Harvest Solar Farm Project
SCH# 2011094004

Attached for your review and comment is the Notice of Intent (NOI) for the Desert Harvest Solar Farm Project draft Environmental Impact Statement (EIS).

State Responsible agencies must transmit their comments on the scope and content of the EIS, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOI from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Lynnette Elser
Bureau of Land Management, U.S. Department of Interior
22835 Calle San Juan de Los Lagos
Moreno Valley, CA 92553

Please provide a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above (2011094004) in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

RECEIVED
BUREAU OF LAND MGMT.
11 OCT -5 PM 3:05
CALIF. DESERT DISTRICT
MORENO VALLEY, CA

Document Details Report
State Clearinghouse Data Base

SCH# 2011094004
Project Title Desert Harvest Solar Farm Project
Lead Agency Bureau of Land Management

Type NOI Notice of Intent

Description The proposed project would be located on BLM-administered lands in Riverside County about 6 miles north of the rural community of Desert Center, California. The overall site layout and generalized land uses would include a substation, an administration building, operations and maintenance facilities, a transmission line, and temporary construction lay down areas, with a total proposed project footprint of ~1,280 acres. The project's 230-kilovolt (kV) generation interconnection transmission line would either be via the First Solar Desert Sunlight 230 kV gen-tie (as a shared facility), or would be located on private and BLM-administered lands and would utilize a planned 230-to 500 kV substation (referred to as the Red Bluff Substation). The Red Bluff Substation would connect the project to the Southern California Edison regional transmission grid.

Lead Agency Contact

Name Lynnette Elser
Agency U.S. Department of Interior, Bureau of Land Management
Phone 951 697-5233 ***Fax***
email
Address 22835 Calle San Juan de Los Lagos
City Moreno Valley ***State*** CA ***Zip*** 92553

Project Location

County Riverside
City
Region
Cross Streets 6 mi. north of Desert Center
Lat / Long 33° 47' 49" N / 115° 22' 36" W
Parcel No.
Township 4S ***Range*** 15E ***Section*** 25-27 ***Base***

Proximity to:

Highways Hwy 177
Airports
Railways
Waterways
Schools
Land Use BLM - administered land, CDCA Multiple Use Class M (Moderate)

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Growth Inducing; Landuse; Cumulative Effects; Other Issues

---

Reviewing Agencies Department of Conservation; California Energy Commission; Department of Parks and Recreation; Resources, Recycling and Recovery; Department of Water Resources; Department of Fish and Game, Region 6; Native American Heritage Commission; Public Utilities Commission; State Lands Commission; California Highway Patrol; Caltrans, District 8; Department of Toxic Substances Control; Regional Water Quality Control Board, Region 7; Resources Agency

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH # 2011094

RECEIVED
SEP 28 2011
STATE CLEARING HOUSE

Project Title: Desert Harvest Solar Farm Project
Lead Agency: Bureau of Land Management - Dept. of Interior
Contact Person: Lynnette Elser
Mailing Address: 22835 Calle San Juan de Los Lagos
Phone: (951) 697-5233
City: Moreno Valley
Zip: 92553
County: Riverside

Project Location: County: Riverside
City/Nearest Community: Lake Tamarisk and Desert Center
Cross Streets: 6 miles north of Desert Center
Zip Code: 92239
Longitude/Latitude (degrees, minutes and seconds): 33 ° 47 ′ 49 ″ N / 115 ° 22 ′ 36 ″ W
Total Acres: 1,280
Assessor's Parcel No.:
Section: 25 - 27 Twp.: 4S Range: 15E Base:
Within 2 Miles: State Hwy #: 177
Waterways:
Airports:
Railways:
Schools:

Document Type:

CEQA:
☐ NOP
☐ Early Cons
☐ Neg Dec
☐ Mit Neg Dec
☐ Draft EIR
☐ Supplement/Subsequent EIR
(Prior SCH No.)
Other:

NEPA:
☑ NOI
☐ EA
☐ Draft EIS
☐ FONSI

Other:
☐ Joint Document
☐ Final Document
☐ Other:

Local Action Type:

☐ General Plan Update
☐ General Plan Amendment
☐ General Plan Element
☐ Community Plan
☐ Specific Plan
☐ Master Plan
☐ Planned Unit Development
☐ Site Plan
☐ Rezone
☐ Prezone
☐ Use Permit
☐ Land Division (Subd

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1 copy

Development Type:

☐ Residential: Units ____ Acres ____
☐ Office: Sq.ft. ____ Acres ____ Employees ____
☐ Commercial: Sq.ft. ____ Acres ____ Employees ____
☐ Industrial: Sq.ft. ____ Acres ____ Employees ____
☐ Educational:
☐ Recreational:
☐ Water Facilities: Type ____ MGD ____
☐ Transportation: Ty
☐ Mining: Mi
☑ Power: Type Solar Photovoltaic MW 150
☐ Waste Treatment: Type ____ MGD ____
☐ Hazardous Waste: Type
☐ Other:

Project Issues Discussed in Document:

☑ Aesthetic/Visual
☑ Agricultural Land
☑ Air Quality
☑ Archeological/Historical
☑ Biological Resources
☐ Coastal Zone
☐ Drainage/Absorption
☐ Economic/Jobs
☐ Fiscal
☐ Flood Plain/Flooding
☐ Forest Land/Fire Hazard
☑ Geologic/Seismic
☑ Minerals
☑ Noise
☑ Population/Housing Balance
☑ Public Services/Facilities
☑ Recreation/Parks
☐ Schools/Universities
☐ Septic Systems
☐ Sewer Capacity
☑ Soil Erosion/Compaction/Grading
☑ Solid Waste
☑ Toxic/Hazardous
☑ Traffic/Circulation
☑ Vegetation
☑ Water Quality
☑ Water Supply/Groundwater
☑ Wetland/Riparian
☑ Growth Inducement
☑ Land Use
☑ Cumulative Effects
☑ Other: Env. Justice

Present Land Use/Zoning/General Plan Designation:
BLM-administered land, CDCA Multiple Use Class M (Moderate)

Project Description: *(please use a separate page if necessary)*
The proposed project would be located on BLM-administered lands in Riverside County about 6 miles north of the rural community of Desert Center, California. The overall site layout and generalized land uses would include a substation, an administration building, operations and maintenance facilities, a transmission line, and temporary construction lay down areas, with a total proposed project footprint of approximately 1,280 acres. The project's 230-kilovolt (kV) generation interconnection transmission line would either be via the First Solar Desert Sunlight 230-kV gen-tie (as a shared facility), or would be located on private and BLM-administered lands and would utilize a planned 230- to 500-kV substation (referred to as the Red Bluff Substation). The Red Bluff Substation would connect the project to the Southern California Edison regional transmission grid.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X".
If you have already sent your document to the agency please denote that with an "S".

X Air Resources Board
____ Boating & Waterways, Department of
X California Highway Patrol
X Caltrans District #8
____ Caltrans Division of Aeronautics
____ Caltrans Planning
____ Central Valley Flood Protection Board
____ Coachella Valley Mtns. Conservancy
____ Coastal Commission
____ Colorado River Board
X Conservation, Department of
____ Corrections, Department of
____ Delta Protection Commission
____ Education, Department of
X Energy Commission
X Fish & Game Region #6
____ Food & Agriculture, Department of
____ Forestry and Fire Protection, Department of
____ General Services, Department of
____ Health Services, Department of
____ Housing & Community Development
X Integrated Waste Management Board
X Native American Heritage Commission

X Office of Emergency Services
X Office of Historic Preservation
____ Office of Public School Construction
X Parks & Recreation, Department of
____ Pesticide Regulation, Department of
X Public Utilities Commission
X Regional WQCB #7
____ Resources Agency
____ S.F. Bay Conservation & Development Comm.
____ San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
____ San Joaquin River Conservancy
____ Santa Monica Mtns. Conservancy
____ State Lands Commission
____ SWRCB: Clean Water Grants
____ SWRCB: Water Quality
____ SWRCB: Water Rights
____ Tahoe Regional Planning Agency
____ Toxic Substances Control, Department of
____ Water Resources, Department of

____ Other: ____
____ Other: ____

Local Public Review Period (to be filled in by lead agency)

Starting Date September 15, 2011
Ending Date October 17, 2011

Lead Agency (Complete if applicable):

Consulting Firm: Aspen Environmental Group
Address: 235 Montgomery St. Suite 935
City/State/Zip: San Francisco, CA 94104
Contact: Marisa Mitchell
Phone: 415-955-4775 x 206

Applicant: enXco
Address: 4000 Executive Parkway Ste 100S
City/State/Zip: San Ramon, CA 94583
Phone: 925-365-3731

Signature of Lead Agency Representative: ____ **Date:** 9/27/2011

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

ution List

County: Riverside

SCH# 2011084004

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Recycling &

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ish & Game

al Services Division

☐ **Fish & Game Region 1E**
Laurie Harnsberger

☐ **Fish & Game Region 2**
Jeff Drongesen

☐ **Fish & Game Region 3**
Charles Armor

☐ **Fish & Game Region 4**
Julie Vance

☐ **Fish & Game Region 5**
Leslie Newton-Reed
Habitat Conservation Program

☒ **Fish & Game Region 6**
Gabrina Gatchel
Habitat Conservation Program

☐ **Fish & Game Region 6 I/M**
Brad Henderson
Inyo/Mono, Habitat Conservation Program

☐ **Dept. of Fish & Game M**
George Isaac
Marine Region

Other Departments

☐ **Food & Agriculture**
Steve Shaffer
Dept. of Food and Agriculture

☐ **Depart. of General Services**
Public School Construction

☐ **Dept. of General Services**
Anna Garbeff
Environmental Services Section

☐ **Dept. of Public Health**
Bridgette Binning
Dept. of Health/Drinking Water

Independent Commissions,Boards

☐ **Delta Protection Commission**
Linda Flack

☐ **Cal EMA (Emergency Management Agency)**
Dennis Castrillo

☐ **Governor's Office of Planning & Research**
State Clearinghouse

☒ **Native American Heritage**

☒ **Public Utilities Commission**
Leo Wong

☒ **State Lands Commission**
Marina Brand

☐ **Tahoe Regional Planning Agency (TRPA)**
Cherry Jacques

Business, Trans & Housing

☐ **Caltrans - Division of Aeronautics**
Philip Crimmins

☐ **Caltrans - Planning**
Terri Pencovic

☒ **California Highway Patrol**
Bob Nannini
Office of Special Projects

☐ **Housing & Community Development**
CEQA Coordinator
Housing Policy Division

Dept. of Transportation

☐ **Caltrans, District 1**
Rex Jackman

☐ **Caltrans, District 2**
Marcelino Gonzalez

☐ **Caltrans, District 3**
Bruce de Terra

☐ **Caltrans, District 4**
Lisa Carboni

☐ **Caltrans, District 5**
David Murray

☐ **Caltrans, District 6**
Michael Navarro

☐ **Caltrans, District 7**
Elmer Alvarez

☒ **Caltrans, District 8**
Dan Kopulsky

☐ **Caltrans, District 9**
Gayle Rosander

☐ **Caltrans, District 10**
Tom Dumas

☐ **Caltrans, District 11**
Jacob Armstrong

☐ **Caltrans, District 12**
Marlon Regisford

Cal EPA

Air Resources Board

☐ Airport Projects
Jim Lerner

- ☐ Transportation Projects
  Lucille Ommering
- ☐ Industrial Projects
  Mike Tollstrup

☐ **State Water Resources Control Board**
Regional Programs Unit
Division of Financial Assistance

☐ **State Water Resources Control Board**
Student Intern, 401 Water Quality Certification Unit
Division of Water Quality

☐ **State Water Resouces Control Board**
Phil Crader
Division of Water Rights

☒ **Dept. of Toxic Substances Control**
CEQA Tracking Center

☐ **Department of Pesticide Regulation**
CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

☐ **RWQCB 1**
Cathleen Hudson
North Coast Region (1)

☐ **RWQCB 2**
Environmental Document Coordinator
San Francisco Bay Region (2)

☐ **RWQCB 3**
Central Coast Region (3)

☐ **RWQCB 4**
Teresa Rodgers
Los Angeles Region (4)

☐ **RWQCB 5S**
Central Valley Region (5)

- ☐ **RWQCB 5F**
  Central Valley Region (5)
  Fresno Branch Office
- ☐ **RWQCB 5R**
  Central Valley Region (5)
  Redding Branch Office

☐ **RWQCB 6**
Lahontan Region (6)

- ☐ **RWQCB 6V**
  Lahontan Region (6)
  Victorville Branch Office

☒ **RWQCB 7**
Colorado River Basin Region (7)

☐ **RWQCB 8**
Santa Ana Region (8)

☐ **RWQCB 9**
San Diego Region (9)

☐ Other ______________
____
____

Last Updated 08/23/2011

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

OCT 17 2011

Lynnette Elser, Planning and Environmental Coordinator
BLM California Desert District Office
22835 Calle San Juan de Los Lagos
Moreno Valley, California 92553

Subject: Notice of Intent to Prepare an Environmental Impact Statement for the Proposed enXco Desert Harvest Solar Farm Project, Riverside County, California and Possible Land Use Plan Amendment to the California Desert Conservation Area Plan

Dear Ms. Elser:

The U.S. Environmental Protection Agency has reviewed the September 15, 2011 Notice of Intent to prepare an Environmental Impact Statement for the Proposed enXco Desert Harvest Solar Farm Project, Riverside County, California (CACA 49491), which may include an amendment to the California Desert Conservation Area Plan. Our comments are provided pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508) and Section 309 of the Clean Air Act.

The EPA supports increasing the development of renewable energy resources, as recommended in the National Energy Policy Act of 2005. Using renewable energy resources such as solar power can help the nation meet its energy requirements without generating greenhouse gas emissions. EPA believes that early analyses of key resource areas and the identification of compensatory mitigation lands should be completed as early as possible to determine a project's viability and avoid potential project delays. In light of large influx of renewable energy projects in the Riverside East Solar Energy Zone (SEZ), we are particularly concerned about direct and cumulative impacts to vulnerable aquatic, cultural, and biological resources, including threatened and endangered species.

Further, as the proposed project is located within the Desert Renewable Energy Conservation Plan study area as well as within the proposed Riverside East SEZ identified in the Solar Programmatic EIS, we believe it is imperative that the DEIS discuss how the proposed project will demonstrate consistency with these ongoing efforts.

We appreciate the opportunity to review this NOI and are available to discuss our comments. Please send two hard copies of the Draft EIS and one CD ROM copy to this office at the same time it is officially filed with our Washington D.C. Office. If you have any questions, please contact me at (415) 972-3238 or plenys.tom@epa.gov.

Sincerely,

Tom Plenys
Environmental Review Office
Communities and Ecosystems Division

Enclosure: EPA's Detailed Comments

US EPA DETAILED COMMENTS ON THE NOTICE OF INTENT TO PREPARE AN ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED ENEXCO DESERT HARVEST SOLAR FARM PROJECT AND POSSIBLE LAND USE PLAN AMENDMENT TO THE CALIFORNIA DESERT CONSERVATION AREA PLAN, RIVERSIDE COUNTY, CALIFORNIA OCTOBER 17, 2011

Project Description

EnXco has requested a right of way authorization from the Bureau of Land Management to construct, operate, maintain, and decommission a 150–megawatt (MW) photovoltaic solar energy facility and ancillary facilities in Riverside County, California (CACA 49491). The proposed 150 MW PV facility would include: PV arrays, access roads, an electrical substation, an administration building, operations and maintenance facilities, a transmission line and temporary construction lay down areas. In addition, the project's 230-kilovolt (kV) generation interconnection transmission line would either be via the First Solar Desert Sunlight 230-kV gen-tie (as a shared facility), or would be located on private and BLM-administered lands and would utilize a planned 230- to 500-kV proposed Red Bluff Substation. The project would be constructed on approximately 1,280 acres of public lands. The project site is located approximately 6 miles north of Desert Center California and lies due south from the previously approved First Solar Desert Sunlight Solar Farm project.

Statement of Purpose and Need

The Draft Environmental Impact Statement should clearly identify the underlying purpose and need to which the BLM is responding in proposing the alternatives (40 CFR 1502.13). The *purpose* of the proposed action is typically the specific objectives of the activity, while the *need* for the proposed action may be to eliminate a broader underlying problem or take advantage of an opportunity.

> *Recommendation:*
> The purpose and need should be a clear, objective statement of the rationale for the proposed project. The DEIS should discuss the proposed project in the context of the larger energy market that this project would serve and discuss how the project will assist the state in meeting its renewable energy portfolio standards and goals.

Alternatives Analysis

The National Environmental Policy Act requires evaluation of reasonable alternatives, including those that may not be within the jurisdiction of the lead agency (40 CFR Section 1502.14(c)). A robust range of alternatives will include options for avoiding significant environmental impacts. The DEIS should provide a clear discussion of the reasons for the elimination of alternatives which are not evaluated in detail. A range of reasonable alternatives should include alternative sites and technologies; alternatives with reduced acreage, reduced MWs, or modified footprints; as well as alternatives that identify and avoid environmentally sensitive areas or areas with potential use conflicts. The alternatives analysis should describe the approach used to identify environmentally sensitive areas and describe the process that was used to designate them in terms of sensitivity (low, medium, and high).

The environmental impacts of the proposal and alternatives should be presented in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public (40 CFR 1502.14). The potential environmental impacts of each alternative should be quantified to the greatest extent possible (e.g., acres of pristine desert impacted, tons per year of emissions produced).

Recommendations:
The DEIS should describe how each alternative was developed, how it addresses each project objective, and how it will be implemented. The alternatives analysis should include a discussion of a reduced acreage, reduced MW and modified footprint alternatives, as well as alternative sites and generating technologies, including different types of solar technologies, and describe the benefits associated with the proposed technology.

The DEIS should clearly describe the rationale used to determine whether impacts of an alternative are significant or not. Thresholds of significance should be determined by considering the context and intensity of an action and its effects (40 CFR 1508.27).

The EPA strongly encourages BLM and other interested parties to pursue the siting of renewable energy projects on disturbed, degraded, and contaminated sites, including fallow or abandoned agricultural lands before considering large tracts of undisturbed public lands.

The EPA recommends that the DEIS identify and analyze an *environmentally preferred alternative*. This alternative should consider options such as downsizing the proposed project within the project area and/or relocating sections/components of the project to other areas, including private land, to avoid or reduce environmental impacts.

The EPA recommends consideration of a desert or ephemeral wash avoidance alternative for full evaluation in the DEIS.

Water Resources

Water Supply and Water Quality

PV electrical generation facilities generally need much less water than solar thermal plants. The DEIS should estimate the quantity of water the project will require and describe the source of this water and potential effects on other water users and natural resources in the project's area of influence. The DEIS should clearly depict reasonably foreseeable direct, indirect, and cumulative impacts to this resource. If groundwater is to be used, the potentially-affected groundwater basin should be identified and any potential for subsidence and impacts to springs or other open water bodies and biologic resources should be analyzed. The DEIS should include:

- A discussion of the amount of water needed for the proposed PV electrical generation facility and where this water will be obtained.
- A discussion of availability of groundwater within the basin and annual recharge rates. A description of the water right permitting process and the status of water rights within that basin, including an analysis of whether water rights have been over-allocated.
- A discussion of cumulative impacts to groundwater supply within the hydrographic basin, including impacts from other large-scale solar installations that have also been proposed.
- An analysis of different types of technology that can be used to minimize or recycle water.
- A discussion of whether it would be feasible to use other sources of water, including potable water, irrigation canal water, wastewater or deep-aquifer water.
- An analysis of the potential for alternatives to cause adverse aquatic impacts such as impacts to water quality and aquatic habitats.

Recommendations:
The DEIS should address the potential effects of project discharges, if any, on surface water quality. Specific discharges should be identified and potential effects of discharges on designated beneficial uses of affected waters should be analyzed. If the facility is a zero discharge facility, the DEIS should disclose the amount of process water that would be disposed of onsite and explain methods of onsite containment.

The EPA strongly encourages the BLM to include in the DEIS a description of all water conservation measures that will be implemented to reduce water demands. Project designs should maximize conservation measures such as appropriate use or recycled water for landscaping and industry, xeric landscaping and water conservation education.

The DEIS should describe water reliability for the proposed project and clarify how existing and/or proposed sources may be affected by climate change. At a minimum, the EPA expects a qualitative discussion of impacts to water supply and the adaptability of the project to these changes.

Clean Water Act Section 404
The project applicant should coordinate with the U.S. Army Corps of Engineers to determine if the proposed project requires a Section 404 permit under the Clean Water Act. Section 404 regulates the discharge of dredged or fill material into waters of the United States (WOUS), including wetlands and other *special aquatic sites*. The DEIS should describe all WOUS that could be affected by the project alternatives, and include maps that clearly identify all waters within the project area. In addition, the EPA suggests that the BLM include a jurisdictional delineation for all WOUS, including ephemeral drainages, in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manual* and the December 2006 *Arid West Region Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region.* A jurisdictional delineation will confirm the presence or absence of WOUS in the project area and help determine impact avoidance or if state and federal permits would be required for activities that affect WOUS.

If a Section 404 permit is required, the EPA will review the project for compliance with Section 404(b)(1) Guidelines to ensure any permitted discharge into WOUS must be the least environmentally damaging practicable alternative available to achieve the project purpose. If needed, the DEIS should include an evaluation of the project alternatives within this context in order to demonstrate the project's compliance with the 404(b)(1) Guidelines. Aligning NEPA and CWA Section 404 requirements will streamline the permitting process if a permit is required.

Recommendations:
The DEIS should include a jurisdictional delineation for all WOUS, including ephemeral drainages, in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manual* and the December 2006 *Arid West Region Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region.* A jurisdictional delineation will confirm the presence of WOUS in the project area and help determine impact avoidance or if state and federal permits would be required for activities that affect WOUS.

The DEIS should describe all WOUS that could be affected by the project alternatives, and include maps that clearly identify all WOUS within the project area. The discussion should include acreages and channel lengths, habitat types, values, and functions of these WOUS.

Drainages, Ephemeral Washes, and Floodplains
The DEIS should describe the original (natural) drainage patterns in the project locale, as well as the drainage patterns of the area during project operations, and identify whether any components of the proposed project are within a 50 or 100-year floodplain. The DEIS should consider the upstream and downstream reach of waters and their importance in this landscape. Natural washes perform a diversity of hydrologic, biochemical, and geochemical functions that directly affect the integrity and functional condition of higher-order waters downstream. Healthy ephemeral waters with characteristic plant communities control rates of sediment deposition and dissipate the energy associated with flood flows. Ephemeral washes also provide habitat for breeding, shelter, foraging and movement of wildlife. Many plant populations are dependent on these aquatic ecosystems and adapted to their unique conditions.

Resources in the desert are particularly vulnerable to utility-scale solar energy development. These resources are being cumulatively impacted by the numerous large-scale solar development projects being proposed in the desert. The potential damage that could result from disturbance of such washes includes alterations to the hydrological functions that natural channels provide in arid ecosystems, including adequate capacity for flood control, energy dissipation and sediment movement, as well as impacts to valuable habitat for desert species. For these reasons, the EPA recommends that a desert or ephemeral wash avoidance alternative be created, which would be consistent with the goals and objectives of NEPA to promote efforts which will prevent or eliminate damage to the environment and biosphere (42 USC § 4321), and to attain the widest range of beneficial uses of the environment without degradation (42 USC § 4331).

Recommendations:
The EPA recommends that the DEIS characterize the functions of any aquatic features that could be affected by the proposed project, including those determined not to constitute waters of the U.S., and describe how the proponent will avoid, minimize and mitigate such impacts.

The EPA recommends development of a desert or ephemeral wash avoidance alternative for full evaluation in the DEIS.

To avoid and minimize direct and indirect impacts to desert washes (such as erosion, migration of channels and local scour), the EPA recommends:

- Avoid placement of support structures in washes;
- Utilize existing natural drainage channels on site and more natural features, such as earthen berms or channels, rather than concrete-lined channels;
- Commit to the use of natural washes, in their present location and natural form and including adequate natural buffers, for flood control to the maximum extent practicable;
- Minimize the number of road crossings over washes and designing necessary crossings to provide adequate flow-through during storm events; and
- Avoid complete clearing and grading of the site by evaluating the mounting of PV panels at sufficient height above ground to maintain natural vegetation and reduce impacts to drainages.

Discuss the availability of sufficient compensation lands within the project's watershed to replace desert wash functions lost on the project site.

To avoid clearing and grading of the site, we recommend evaluating mounting PV panels at sufficient height above ground to maintain natural vegetation and preserve the site's natural drainage. It is our understanding that other PV solar companies have proposed such designs which can reduce the need for site clearing and grading.

> *Recommendation:*
> The DEIS should evaluate mounting PV panels at sufficient height above ground to maintain natural vegetation and minimize drainage disturbance. Quantify acreage that would not require clearing and grading as a result. Compare these results to other alternatives, and incorporate project design changes into site design and conditions of certification.

Construction Stormwater Discharge Permit
The California State Water Resources Control board requires owner/operators to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity if the project will disturb more than one acre of soil. Given the disturbance area for this project, California State Water Resources Control Board General Permit associated with construction activity Construction General Permit Order 2009-0009-DWQ would likely be required. Additionally, a Stormwater Pollution Prevention Plan, that includes erosion control measures, would need to be generated for the project and implemented on-site.

The SWPPP would include the elements described in the Construction General Permit, including a site map(s) showing the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP also would list Best Management Practices, including erosion control BMPs that would be used to protect stormwater runoff, and include a description of required monitoring programs.

Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Section A of the Construction General Permit describes the elements that must be contained in a SWPPP. Guidance from other documents, such as the EPA document entitled "Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites" also could be used in the development of the SWPPP.

> *Recommendation:*
> The EPA recommends that the applicant determine the need for a California State Water Resources Control Board General Permit associated with construction activity Construction General Permit Order 2009-0009-DWQ. If such a permit is required, include a description of the proposed stormwater pollution control and mitigation measures in the DEIS.

Biological Resources and Habitat

The DEIS should identify all petitioned and listed threatened and endangered species and critical habitat that might occur within the project area. The document should identify and quantify which species or critical habitat might be directly, indirectly, or cumulatively affected by each alternative and mitigate impacts to these species. Emphasis should be placed on the protection and recovery of species due to their status or potential status under the Endangered Species Act. For this project, EPA is concerned regarding potential impacts to foraging and nesting habitat for a variety of species including, but not limited to, desert tortoise, fringe toed lizards, burrowing owls, migratory birds and raptors. We recommend ensuring best practices are utilized to survey and adequately protect desert tortoises in light of the recent findings of significantly higher numbers of desert tortoises than initially surveyed at the Ivanpah Solar Electric Generating System site.

Recommendations
The EPA recommends that the BLM consult with the U.S. Fish and Wildlife Service and prepare a Biological Opinion under Section 7 of the ESA for all threatened or endangered species present.

We also recommend that BLM coordinate across field offices and with USFWS and California Department of Fish and Game to ensure that current and consistent surveying, monitoring, and reporting protocols are applied in protection and mitigation efforts.

The DEIS should provide a recent status update of this report if these actions have been or will be undertaken. Analysis of impacts and mitigation on covered species should include:

- Baseline conditions of habitats and populations of the covered species.
- A clear description of how avoidance, mitigation and conservation measures will protect and encourage the recovery of the covered species and their habitats in the project area.
- Monitoring, reporting and adaptive management efforts to ensure species and habitat conservation effectiveness.

Discuss the need for monitoring, mitigation, and if applicable, translocation management plans for the sensitive biological resources, approved by the BLM and the biological resource management agencies. This would include, but not limited to, an Avian Protection Plan, a Raven Monitoring, Management, and Control Plan, Burrowing Owl Mitigation, Monitoring and Translocation Plan, Desert Tortoise Relocation/Translocation Plan, Desert Tortoise Compensatory Mitigation Plan, Special – Status Plant Impact Avoidance and Mitigation Plan, and Management Plan for Sand Dune/Fringed-Toed Lizard.

The DEIS should include assurances that the design of the transmission line would be in compliance with current standards and practices that reduce the potential for raptor fatalities and injuries. The commonly referenced source of such design practices is found within the Avian Power Line Interaction Committee documents: Suggested Practices for Avian Protection on Power Lines: State of the Art in 2006 manual and Mitigating Bird Collisions with Power Lines: The State of the Art in 1994. Also include a requirement for an Avian Protection Plan to be developed using the 2005 Avian Power Line Interaction Committee and U.S. Fish and Wildlife Service Avian Protection Plan Guidelines.

The EPA is concerned about habitat fragmentation and obstructions for wildlife movement resulting from the proposed Project since it lies between Joshua Tree National Monument, north of the project, and the Chuckwalla Desert Wildlife Management Area, south of the project.

Recommendation:
The DEIS should describe the potential for habitat fragmentation and obstructions for wildlife movement from the construction of this project and other utility scale renewable energy projects in the eastern Riverside County area.

EPA is also concerned that, at this stage, it is not clear that sufficient compensatory lands are available for potential resource impacts. If the applicant is to acquire compensation lands, the location(s) and management plans for these lands should be discussed in the DEIS. In light of the renewable energy projects and potential development activities in the Chuckwalla Valley area, available land to adequately compensate for environmental impacts to resources such as state jurisdictional waters, desert dry wash woodlands, and desert tortoise, may serve as a limiting factor for development.

Recommendations:
Incorporate, into the DEIS, information on the compensatory mitigation proposals (including quantification of acreages, estimates of species protected, costs to acquire compensatory lands, etc.) for unavoidable impacts to waters of the State and biological resources such as desert tortoise.

Identify compensatory mitigation lands or quantify, in the DEIS, available lands for compensatory habitat mitigation for this project, as well as reasonably foreseeable projects in the greater Chuckwalla Valley watershed. Specify, in the DEIS, provisions that will ensure habitat selected for compensatory mitigation will be protected in perpetuity.

Incorporate, into the DEIS, mitigation, monitoring, and reporting measures that result from consultation with the USFWS and California Department of Fish and Game, and that incorporate lessons learned from other solar projects and recently released guidances to avoid and minimize adverse effects to sensitive biological resources, including habitat for desert tortoise.

Discuss mitigation ratios for tortoise habitat and how these relate to the mitigation ratios recommended by other agencies, as well as how they relate to mitigation ratios used for other renewable energy projects in California and Nevada.

The EPA is also concerned about the potential impact of construction, installation, and maintenance activities (deep trenching, grading, filling, and fencing) on habitat. The DEIS should describe the extent of these activities and the associated impacts on habitat and threatened and endangered species. The EPA is also aware that shade from the PV panels could impact vegetation and/or species in the project area. We encourage habitat conservation alternatives that avoid and protect high value habitat and create or preserve linkages between habitat areas to better conserve the covered species.

Recommendations:
The DEIS should indicate what measures will be taken to protect important wildlife habitat areas from potential adverse effects of proposed covered activities.

The DEIS should discuss the impacts associated with an increase of shade in the desert environment on vegetation and/or species.

The DEIS should discuss the impacts associated with constructing fences around the project site(s), and consider whether there are options that could facilitate better protection of covered species.

Invasive Species

Executive Order 13112, *Invasive Species* (February 3, 1999), mandates that federal agencies take actions to prevent the introduction of invasive species, provide for their control, and minimize the economic, ecological, and human health impacts that invasive species cause. Executive Order 13112 also calls for the restoration of native plants and tree species. If the proposed project will entail new landscaping, the DEIS should describe how the project will meet the requirements of Executive Order 13112.

> *Recommendation:*
> The DEIS should include an invasive plant management plan to monitor and control noxious weeds.

Cumulative and Indirect Impacts

The cumulative impacts analysis should identify how resources, ecosystems, and communities in the vicinity of the project have already been, or will be, affected by past, present, or future activities in the project area. These resources should be characterized in terms of their response to change and capacity to withstand stresses. Trends data should be used to establish a baseline for the affected resources, to evaluate the significance of historical degradation, and to predict the environmental effects of the project components.

For the cumulative impacts assessment, we recommend focusing on resources of concern or resources that are "at risk" and/or are significantly impacted by the proposed project, before mitigation. For this project, the BLM should conduct a thorough assessment of the cumulative impacts to aquatic and biological resources, including impacts to desert tortoise, especially in the context of the renewable energy developments occurring and proposed in the eastern Riverside County area. As mentioned, cumulative impacts to desert washes and ecosystems are occurring and will continue to occur from multiple large solar installations in the desert, therefore cumulative impacts to this resource should be thoroughly discussed for this project as well.

The EPA assisted in the preparation of a guidance document for assessing cumulative impacts in California that we find to be very useful. While this guidance was prepared for transportation projects in California, the principles and the 8-step process outlined therein can be applied to other types of projects and offers a systematic way to analyze cumulative impacts for a project. The guidance is available at: http://www.dot.ca.gov/ser/cumulative_guidance/purpose.htm. In accordance with this guidance, the EPA recommends that the DEIS identify which resources are analyzed, which ones are not, and why. For each resource analyzed, the DEIS should:

- Identify the current condition of the resource as a measure of past impacts. For example, the percentage of species habitat lost to date.
- Identify the trend in the condition of the resource as a measure of present impacts. For example, the health of the resource is improving, declining, or in stasis.
- Identify all on-going, planned, and reasonably foreseeable projects in the study area that may contribute to cumulative impacts.
- Identify the future condition of the resource based on an analysis of impacts from reasonably foreseeable projects or actions added to existing conditions and current trends.

- Assess the cumulative impacts contribution of the proposed alternatives to the long-term health of the resource, and provide a specific measure for the projected impact from the proposed alternatives.
- When cumulative impacts are identified for a resource, mitigation should be proposed.
- Disclose the parties that would be responsible for avoiding, minimizing, and mitigating those adverse impacts.
- Identify opportunities to avoid and minimize impacts, including working with other entities.

Recommendations:
The DEIS should consider the cumulative impacts associated with multiple renewable energy and other development projects proposed in the eastern Riverside County area and the potential impacts on various resources including: water supply, endangered species, and habitat.

The BLM and project proponents should conduct a regional assessment of resource impacts, given the number of projects under construction or planned for the region.

As an indirect result of providing additional power, it can be anticipated that these projects will allow for development and population growth to occur in those areas that receive the generated electricity.

Recommendation:
The DEIS should describe the reasonably foreseeable future land use and associated impacts that will result from the additional power supply. The document should provide an estimate of the amount of growth, its likely location, and the biological and environmental resources at risk.

Consistency of the Desert Harvest Project with the California Desert Renewable Energy Conservation Plan and the Solar PEIS

The California DRECP, scheduled for completion in December 2012, is intended to advance State and federal conservation goals in the desert regions while also facilitating the timely permitting of renewable energy projects in California. The DRECP will include a strategy that identifies and maps areas for renewable energy development and areas for long-term natural resource conservation. The Solar Programmatic EIS, scheduled for completion in Summer 2012, is being developed by the DOE and the BLM and is intended to apply to all pending and future solar energy development applications. The Desert Harvest project is located in the DRECP boundary area and in one of the Solar Energy Zones identified in the PEIS, the Riverside East Solar Energy Zone. The EPA supports both the California DRECP and the Solar PEIS. We are concerned, however, that there may be potential conflicts between these programmatic documents and the Desert Harvest Project, and that these conflicts may not be recognized until after all the documents have been published.

Recommendation:
We recommend that BLM elaborate on the DRECP and Solar PEIS in the DEIS, and include up-to-date maps illustrating the current boundaries and conceptual alternatives. The DEIS should acknowledge that additional requirements and/or conditions may apply under the DRECP and the Solar PEIS.

Climate Change

Scientific evidence supports the concern that continued increases in greenhouse gas emissions resulting from human activities will contribute to climate change. Global warming is caused by emissions of carbon dioxide and other heat-trapping gases. On December 7, 2009, the EPA determined that emissions of GHGs contribute to air pollution that "endangers public health and welfare" within the meaning of the Clean Air Act. One report indicates that observed changes in temperature, sea level, precipitation regime, fire frequency, and agricultural and ecological systems reveal that California is already experiencing the measurable effects of climate change[1]. The report indicates that climate change could result in the following changes in California: poor air quality; more severe heat; increased wildfires; shifting vegetation; declining forest productivity; decreased spring snowpack; water shortages; a potential reduction in hydropower; a loss in winter recreation; agricultural damages from heat, pests, pathogens, and weeds; and rising sea levels resulting in shrinking beaches and increased coastal floods.

Recommendations:
The DEIS should consider how climate change could potentially influence the proposed project, specifically within sensitive areas, and assess how the projected impacts could be exacerbated by climate change.

The DEIS should quantify and disclose the anticipated climate change *benefits* of solar energy. We suggest quantifying greenhouse gas emissions from different types of generating facilities including solar, geothermal, natural gas, coal-burning, and nuclear and compiling and comparing these values.

Air Quality

The DEIS should provide a detailed discussion of ambient air conditions (baseline or existing conditions), National Ambient Air Quality Standards, criteria pollutant nonattainment areas, and potential air quality impacts of the proposed projects (including cumulative and indirect impacts). Such an evaluation is necessary to assure compliance with State and Federal air quality regulations, and to disclose the potential impacts from temporary or cumulative degradation of air quality.

The DEIS should describe and estimate air emissions from potential construction and maintenance activities, as well as proposed mitigation measures to minimize those emissions. EPA recommends an evaluation of the following measures to reduce emissions of criteria air pollutants and hazardous air pollutants (air toxics).

Recommendations:

- *Existing Conditions* – The DEIS should provide a detailed discussion of ambient air conditions, National Ambient Air Quality Standards, and criteria pollutant nonattainment areas in all areas considered for solar development.

- *Quantify Emissions* – The DEIS should estimate emissions of criteria pollutants from the proposed projects and discuss the timeframe for release of these emissions over the lifespan of the projects. The DEIS should describe and estimate emissions from potential construction activities, as well as proposed mitigation measures to minimize these emissions.

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[1] Moser, Susie, Guido Franco, Sarah Pittiglio, Wendy Chou, Dan Cayan. 2009. The Future Is Now: An Update on Climate Change Science Impacts and Response Options for California. California Energy Commission, PIER Energy-Related Environmental Research Program. CEC-500-2008-071.

- *Specify Emission Sources* – The DEIS should specify the emission sources by pollutant from mobile sources, stationary sources, and ground disturbance. This source specific information should be used to identify appropriate mitigation measures and areas in need of the greatest attention.

- *Construction Emissions Mitigation Plan* – The DEIS should include a draft Construction Emissions Mitigation Plan and ultimately adopt this plan in the Record of Decision. In addition to all applicable local, state, or federal requirements, we recommend the following control measures (Fugitive Dust, Mobile and Stationary Source and Administrative) be included in the Construction Emissions Mitigation Plan in order to reduce impacts associated with emissions of particulate matter and other toxics from construction-related activities:

- *Fugitive Dust Source Controls:* The DEIS should identify the need for a Fugitive Dust Control Plan to reduce Particulate Matter 10 and Fine Particulate Matter 2.5 emissions during construction and operations. We recommend that the plan include these general commitments:
    - Stabilize heavily used unpaved construction roads with a non-toxic soil stabilizer or soil weighting agent that will not result in loss of vegetation, or increase other environmental impacts.
    - During grading use water, as necessary, on disturbed areas in construction sites to control visible plumes.
    - Vehicle Speed
        - Limit speeds to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.
        - Limit speeds to 10 miles per hour or less on unpaved areas within construction sites on unstabilized (and unpaved) roads.
        - Post visible speed limit signs at construction site entrances.
    - Inspect and wash construction equipment vehicle tires, as necessary, so they are free of dirt before entering paved roadways, if applicable.
    - Provide gravel ramps of at least 20 feet in length at tire washing/cleaning stations, and ensure construction vehicles exit construction sites through treated entrance roadways, unless an alternative route has been approved by appropriate lead agencies, if applicable.
    - Use sandbags or equivalent effective measures to prevent run-off to roadways in construction areas adjacent to paved roadways. Ensure consistency with the project's Storm Water Pollution Prevention Plan, if such a plan is required for the project
    - Sweep the first 500 feet of paved roads exiting construction sites, other unpaved roads en route from the construction site, or construction staging areas whenever dirt or runoff from construction activity is visible on paved roads, or at least twice daily (less during periods of precipitation).
    - Stabilize disturbed soils (after active construction activities are completed) with a non-toxic soil stabilizer, soil weighting agent, or other approved soil stabilizing method.
    - Cover or treat soil storage piles with appropriate dust suppressant compounds and disturbed areas that remain inactive for longer than 10 days. Provide vehicles (used to

transport solid bulk material on public roadways and that have potential to cause visible emissions) with covers. Alternatively, sufficiently wet and load materials onto the trucks in a manner to provide at least one foot of freeboard.
  - Use wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) where soils are disturbed in construction, access and maintenance routes, and materials stock pile areas. Keep related windbreaks in place until the soil is stabilized or permanently covered with vegetation.

- *Mobile and Stationary Source Controls:*
  - If practicable, lease new, clean equipment meeting the most stringent of applicable Federal[2] or State Standards[3]. In general, commit to the best available emissions control technology. Tier 4 engines should be used for project construction equipment to the maximum extent feasible[4].
  - Where Tier 4 engines are not available, use construction diesel engines with a rating of 50 hp or higher that meet, at a minimum, the Tier 3 California Emission Standards for Off-Road Compression-Ignition Engines[5], unless such engines are not available.
  - Where Tier 3 engine is not available for off-road equipment larger than 100 hp, use a Tier 2 engine, or an engine equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides and diesel particulate matter to no more than Tier 2 levels.
  - Consider using electric vehicles, natural gas, biodiesel, or other alternative fuels during construction and operation phases to reduce the project's criteria and greenhouse gas emissions.
  - Plan construction scheduling to minimize vehicle trips.
  - Limit idling of heavy equipment to less than 5 minutes and verify through unscheduled inspections.
  - Maintain and tune engines per manufacturer's specifications to perform at CARB and/or EPA certification levels, prevent tampering, and conduct unscheduled inspections to ensure these measures are followed.

- *Administrative controls:*
  - Develop a construction traffic and parking management plan that maintains traffic flow and plan construction to minimize vehicle trips.
  - Identify any sensitive receptors in the project area, such as children, elderly, and infirmed, and specify the means by which you will minimize impacts to these populations (e.g. locate construction equipment and staging zones away from sensitive receptors and building air intakes).
  - Include provisions for monitoring fugitive dust in the fugitive dust control plan and initiate increased mitigation measures to abate any visible dust plumes.

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[2] EPA's website for nonroad mobile sources is http://www.epa.gov/nonroad/.

[3] For California, see ARB emissions standards, see: http://www.arb.ca.gov/msprog/offroad/offroad.htm.

[4] Diesel engines < 25 hp rated power started phasing in Tier 4 Model Years in 2008. Larger Tier 4 diesel engines will be phased in depending on the rated power (e.g., 25 hp - <75 hp: 2013; 75 hp - < 175 hp: 2012-2013; 175 hp - < 750 hp: 2011 - 2013; and ≥ 750 hp 2011- 2015).

[5] as specified in California Code of Regulations, Title 13, section 2423(b)(1)

Hazardous Materials/Hazardous Waste/Solid Waste

The DEIS should address potential direct, indirect and cumulative impacts of hazardous waste from construction and operation of the proposed facility. The document should identify projected hazardous waste types and volumes, and expected storage, disposal, and management plans. It should address the applicability of state and federal hazardous waste requirements. Appropriate mitigation should be evaluated, including measures to minimize the generation of hazardous waste (i.e., hazardous waste minimization). Alternate industrial processes using less toxic materials should be evaluated as mitigation since such processes could reduce the volume or toxicity of hazardous materials requiring management and disposal as hazardous waste.

PV Production/Recycling

PV production can address the full product life cycle, from raw material sourcing through end of life collection and reuse or recycling. PV companies can minimize their environmental impacts during raw material extraction and minimize the amount of rare materials used in the product. PV manufacturing facilities exist that are zero waste and have no air or water emissions. PV companies can facilitate future material recovery for reuse or recycling. Several solar companies have developed approaches to recycling solar modules that enable treatment and processing of PV module components into new modules or other projects. Solar companies can facilitate collection and recycling through buy-back programs or collection and recycling guarantees. Several companies provide recycling programs that pay all packaging, transportation, and recycling costs.

> *Recommendations:*
>
> EPA recommends that the proponent strive to address the full product life cycle by sourcing PV components from a company that: 1) minimizes environmental impacts during raw material extraction; 2) manufactures PV panels in a zero waste facility; 3) provides future PV disassembly for material recovery for reuse and recycling; and 4) minimizes the carbon footprint associated with the manufacture and transport of PV panels.

Project Decommissioning, Site Restoration and Financial Assurance

Desert ecosystems have evolved over millennia to withstand severe conditions. Decommissioning and site restoration in an arid environment may take much longer and require more extensive intervention than in a more temperate region. For the Mojave Desert, sufficient moisture for regeneration is usually only available a couple of months per year. Desert ecosystems may take many years to recover even with active intervention. Disturbances can further slow this process and restoration has been found to be problematic at other sites in arid ecosystems with large-scale disturbance, including open-pit mines. The EPA recommends that the site restoration planning take into account the uncertainty and harshness of the Mojave Desert climate and include monitoring of revegetation progress for at least ten years to ensure that the effort is successful.

> *Recommendations:*
>
> The EPA recommends that the DEIS include a requirement for a decommissioning and site restoration plan. The plan should include: 1) cost estimates – including a requirement for the project owner to secure a performance bond, surety bond, letter of credit, corporate guarantee, or other form of financial assurance adequate to cover the cost of decommissioning and effective restoration; 2) time allotted to complete the decommissioning/restoration; 3) description of the structures, facilities, foundations to be removed; and 4) description of restoration measures

including recontouring the surface and revegetation to a condition reasonably similar to the original condition.

Coordination with Tribal Governments

Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments* (November 6, 2000), was issued in order to establish regular and meaningful consultation and collaboration with tribal officials in the development of federal policies that have tribal implications, and to strengthen the United States government-to-government relationships with Indian tribes.

Recommendation:
The DEIS should describe the process and outcome of government-to-government consultation between the BLM and each of the tribal governments within the project area, issues that were raised (if any), and how those issues were addressed in the selection of the proposed alternative.

National Historic Preservation Act and Executive Order 13007
Consultation for tribal cultural resources is required under Section 106 of the National Historic Preservation Act. Historic properties under the NHPA are properties that are included in the National Register of Historic Places or that meet the criteria for the National Register. Section 106 of the NHPA requires a federal agency, upon determining that activities under its control could affect historic properties, consult with the appropriate State Historic Preservation Officer/Tribal Historic Preservation Officer. Under NEPA, any impacts to tribal, cultural, or other treaty resources must be discussed and mitigated. Section 106 of the NHPA requires that Federal agencies consider the effects of their actions on cultural resources, following regulation in 36 CFR 800.

Executive Order 13007, *Indian Sacred Sites* (May 24, 1996), requires federal land managing agencies to accommodate access to, and ceremonial use of, Indian sacred sites by Indian Religious practitioners, and to avoid adversely affecting the physical integrity, accessibility, or use of sacred sites. It is important to note that a sacred site may not meet the National Register criteria for a historic property and that, conversely, a historic property may not meet the criteria for a sacred site.

Recommendation:
The DEIS should address the existence of Indian sacred sites in the project areas. It should address Executive Order 13007, distinguish it from Section 106 of the NHPA, and discuss how the BLM will avoid adversely affecting the physical integrity, accessibility, or use of sacred sites, if they exist. The DEIS should provide a summary of all coordination with Tribes and with the SHPO/THPO, including identification of NRHP eligible sites, and development of a Cultural Resource Management Plan.

Environmental Justice and Impacted Communities

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994) and the more recent Interagency Memorandum of Understanding on Environmental Justice and Executive Order 12898 (August 4, 2011) direct federal agencies to identify and address disproportionately high and adverse human health or environmental effects on minority and low-income populations, allowing those populations a meaningful opportunity to participate in the decision-making process. Guidance[6] by CEQ clarifies the terms low-income and minority population (which includes Native Americans) and describes the factors to consider when evaluating disproportionately high and adverse human health effects.

> *Recommendations:*
> The DEIS should include an evaluation of environmental justice populations within the geographic scope of the projects. If such populations exist, the DEIS should address the potential for disproportionate adverse impacts to minority and low-income populations, and the approaches used to foster public participation by these populations. Assessment of the projects impact on minority and low-income populations should reflect coordination with those affected populations.
>
> The DEIS should describe outreach conducted to all other communities that could be affected by the project, since rural communities may be among the most vulnerable to health risks associated with the project.

Coordination with Land Use Planning Activities

The DEIS should discuss how the proposed action would support or conflict with the objectives of federal, state, tribal or local land use plans, policies and controls in the project areas. The term "land use plans" includes all types of formally adopted documents for land use planning, conservation, zoning and related regulatory requirements. Proposed plans not yet developed should also be addressed it they have been formally proposed by the appropriate government body in a written form (CEQ's Forty Questions, #23b).

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[6] Environmental Justice Guidance under the National Environmental Policy Act, Appendix A (Guidance for Federal Agencies on Key Terms in Executive Order 12898), CEQ, December 10, 1997.

La Cuna de Aztlan
Sacred Sites Protection Circle

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October 19, 2011

Bureau of Land Management
Public Scoping Meeting
Desert Harvest Solar Project EIS
October 3, 2011

Comments

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Dear Lynette Elser,

This letter is in reference to the Public Scoping meeting that took place on October 3, 2011 in Desert Center, Ca. We want the public to know that we are 100% opposed to the proposed Desert Harvest Solar Project.

The Desert Harvest Solar Project is just an extension of the Desert Solar Farm Project and it is going to contribute to the destruction of one of the most sacred sites that is depicted in the Aztec Sun Stone Calendar. During the meeting I referred to these sacred sites and I hope that Rhonda Goodman, Deposition & Court Reporter was able to note all that I said and that these notes will be available to the general public.

As you well know, Joshua Tree National Park is not only one of the most beautiful desert parks in the United States but it's also one of the 4 corners of the base of what is called "Nahui-Ollin" (Azteca Language) which is commonly known as the Swastika (Image). In addition, the sunset on June 21 and the petroglyphs in Eagle Mountain depict the summer solstice and in the Aztec/Mexica language this is the origin of Cuauhtémoc which means “Descending Sun.” The 13-Acatl Monuments which are also located within the area form one of the 4-points (West Point) on the Aztec Sun Stone Calendar. Also, in this area is where 2 major trails that traverse from the Colorado River down to the Coachella Valley are located.

Phil Smith, Chemehuevi Tribal Monitor stated during the meeting that Desert Center is very sacred to the Chemehuevi Tribe and this is where we used to get the stones for our rituals and metates (Stone Mortars).

According to John Benoit, Riverside County Board of Supervisors, there are over 200,000 acres of available pristine desert public land in Eastern Riverside County for solar power development and apparently this is the same policy that the BLM is currently pursuing. This is totally absurd because the BLM should be there to protect these sacred sites and not allow anyone to destroy them.

As we have seen the government fast-track stimulus money programs have been a complete failure. It is ridiculous to continue spending more government money to promote these projects. As we have found out, even the birds that fly over these solar panels die. In addition, we have other desert wildlife that will be greatly affected by these projects. In a recent article regarding the Jenko Solar Project in China, people are protesting against the solar panel projects in their country because they have not only contaminated water but also the atmosphere that has ruined their agriculture industry. Apparently not even China is benefiting from these thousands of solar panel projects.

We are not totally opposed to solar panels, we feel that they should be placed in areas that have already been disturbed as well as placed on top of roof-tops and in urban areas where energy is mostly need (Warehouses, Supermarkets, apartment complexes etc.) This will totally exclude the need for transmission lines which has now presented major terrorist threats like the blackout that we had on September 8, 2011.

Thank you for allowing us the opportunity to express our concerns and opposition. We are available to take you and tour you and your archaeologists around these sites. So please feel free to contact me.

Sincerely,

Alfredo Acosta Figueroa

Alfredo Acosta Figueroa

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Palm Springs Fish and Wildlife Office
777 East Tahquitz Canyon Way, Suite 208
Palm Springs, California 92262

In Reply Refer To:
FWS-WRIV-10B0593-12TA0018

Memorandum:

To: District Manager, California Desert District, Bureau of Land Management
Moreno Valley, California
Attn: Lynnette Elser, Planning and Environmental Coordinator

From: Assistant Field Supervisor, Palm Springs Fish and Wildlife Office
Carlsbad, California

Subject: Notice of Intent to Prepare an Environmental Impact Statement for the Proposed enXco Desert Harvest Solar Farm Project, Riverside County, California and Possible Land Use Plan Amendment

We are writing this letter to provide formal comments for consideration during the development of the Environmental Impact Statement (EIS) for the proposed construction and operation of enXco's Desert Harvest Solar Project. The proposed project may impact the federally threatened Mojave desert tortoise (*Gopherus agassizii*) and several Federal trust resources including western burrowing owl (*Athene cunicularia*) and golden eagle (*Aquila chrysaetos*). This letter summarizes our verbal comments provided during pre-application filing meetings and coordination conference calls (with the applicant, Bureau of Land Management (BLM), California Department of Fish and Game (CDFG), and U.S. Fish and Wildlife Service (Service) held during the spring of 2011.

The proposed solar photovoltaic project is located approximately 6 miles north of Desert Center, California and 0.6 mile north of Interstate 10 (I-10); the project footprint would be approximately 1,280 acres. The proposed project site is located within the Mojave desert tortoise Colorado Desert Recovery Unit (Service 2011) and shares its southwestern border with the Chuckwalla designated critical habitat unit and Desert Wildlife Management Area. Part of the northern portion occurs within the Palen-Ford multi-species Wildlife Habitat Management Area designated in the Northern and Eastern Colorado Desert Coordinated Management Plan (BLM 2002). The proposed project site is also immediately adjacent to the southern boundary of the more than 4,000-acre Desert Sunlight Solar Farm project, which is currently under construction.

There are numerous applications for utility-scale solar and wind energy projects on public and private land across the southwest to meet either State-mandated or national energy priorities. Given the extent of renewable energy projects in the vicinity, we recommend that BLM and State or local agencies conduct a thorough analysis identifying all cumulative, direct, and indirect effects that are expected from the proposed project and associated infrastructure. The Service is particularly concerned with impacts to Mojave desert tortoise habitat connectivity and the potential loss of gene flow within and among designated critical habitat units across the species' range (Service 2011).

Consequently, the draft EIS analysis should examine potential impacts to the population connectivity requirements of desert tortoise and other plant and wildlife species throughout the project area and alternative project sites to avoid any significant adverse effects.

Migratory birds are federally protected under the Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. 703 *et seq.*) and under Executive Order 13186 - Responsibility of Federal Agencies to Protect Migratory Birds. Based on the Service's management authority for migratory birds under the MBTA, we also recommend that the EIS include an evaluation of potential impacts to migratory and resident birds, particularly the western burrowing owl. Western burrowing owls have been documented in the project area and we recommend protocol surveys for the species be conducted in support of the EIS analysis. In addition to MBTA, eagles are protected under the Bald and Golden Eagle Protection Act. Active and inactive golden eagle nests were documented in 2010 within close proximity to the proposed project. Since nesting patterns change annually, we recommend providing up-to-date biological information about golden eagles within a 10 mile radius of the project area for the EIS analysis. Please refer to the Interim Golden Eagle Inventory and Monitoring Protocols (Pagel *et al.* 2010) for appropriate survey methods.

Finally, to minimize impacts from linear project features, we recommend co-locating these components to the extent practicable with First Solar's Desert Sunlight project. Co-location opportunities include utilizing a common generation tie line alignment, right-of-way, and access roads, and sharing the northernmost boundary security fencing.

We appreciate the opportunity to provide formal comments on the project. We look forward to continuing to work closely with the BLM and the other permitting/approval agencies and other stakeholders involved in this process. If you have any questions regarding these comments, please contact Tera Baird of my staff at 760-322-2070, extension 217.

cc:
Kim Nicol, California Department of Fish and Game, Bermuda Dunes, California

Literature Cited

Bureau of Land Management. 2002. Northern and Eastern Colorado Desert coordinated management plan, an amendment of the 1980 Bureau of Land Management California Desert Conservation Area Plan. Bureau of Land Management, California Desert District, Moreno Valley, California.

Pagel, J.E. Pagel, J.E., D.M. Whittington, and G.T. Allen. 2010. Interim Golden Eagle technical guidance: inventory and monitoring protocols; and other recommendation. Division of Migratory Birds, U.S. Fish and Wildlife Service.

[Service] U.S. Fish and Wildlife Service. 2011. Revised recovery plan for the Mojave population of the desert tortoise (*Gopherus agassizii*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California.

Department of Toxic Substances Control

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Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

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CALIF. DESERT DISTRICT
MORENO VALLEY, CA

October 20, 2011

Ms. Lynnette Elser
U.S. Department of Interior
Bureau of Land Management
22835 Calle San Juan de Los Lagos
Moreno Valley, California 92553

NOTICE OF INTENT OF A DRAFT ENVIRONMENTAL STATEMENT FOR THE DESERT HARVEST SOLAR FARM PROJECT, (SCH#2011094004), RIVERSIDE COUNTY

Dear Ms. Elser:

The Department of Toxic Substances Control (DTSC) has received your submitted Notice of Intent (NOI) for a draft Environmental Impact Statement (EIS) for the above-mentioned project. The following project description is stated in your document: "The Desert harvest Solar Farm Project (desert Harvest Project) is a 150-megawatt (MW) photovoltaic (PV) solar electricity generation project. The proposed project would be located on Bureau of Land Management (BLM) - administered lands in Riverside County about 6 miles north of the rural community of Desert Center, California. The project's 230-kilovolt (kV) generation interconnection transmission line would either be via the First Solar Desert Sunlight 230-kV gen-tie (as a shared facility), or would be located on private and BLM-administered lands and would utilize a planned 230-to-500 kV substation (referred to as the Red Bluff Substation). The Red Bluff Substation would connect the project to the Southern California Edison regional transmission grid. The overall site layout and generalized land uses would include a substation, an administrative building, operations and maintenance facilities, a transmission line, and temporary construction lay down areas, with a total proposed project footprint of approximately 1,280 acres."

Based on the review of the submitted document DTSC has the following comments:

1) The EIS should evaluate whether conditions within the Project area may pose a threat to human health or the environment. Following are the databases of some of the regulatory agencies:

- National Priorities List (NPL): A list maintained by the United States Environmental Protection Agency (U.S.EPA).

- Envirostor (formerly CalSites): A Database primarily used by the California Department of Toxic Substances Control, accessible through DTSC's website (see below).

- Resource Conservation and Recovery Information System (RCRIS): A database of RCRA facilities that is maintained by U.S. EPA.

- Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS): A database of CERCLA sites that is maintained by U.S.EPA.

- Solid Waste Information System (SWIS): A database provided by the California Integrated Waste Management Board which consists of both open as well as closed and inactive solid waste disposal facilities and transfer stations.

- GeoTracker: A List that is maintained by Regional Water Quality Control Boards.

- Local Counties and Cities maintain lists for hazardous substances cleanup sites and leaking underground storage tanks.

- The United States Army Corps of Engineers, 911 Wilshire Boulevard, Los Angeles, California, 90017, (213) 452-3908, maintains a list of Formerly Used Defense Sites (FUDS).

2) The EIS should identify the mechanism to initiate any required investigation and/or remediation for any site within the proposed Project area that may be contaminated, and the government agency to provide appropriate regulatory oversight. If necessary, DTSC would require an oversight agreement in order to review such documents.

3) Any environmental investigations, sampling and/or remediation for a site should be conducted under a Workplan approved and overseen by a regulatory agency that has jurisdiction to oversee hazardous substance cleanup. The findings of any investigations, including any Phase I or II Environmental Site Assessment Investigations should be summarized in the document. All sampling results in which hazardous substances were found above regulatory standards should be clearly summarized in a table. All closure, certification or remediation approval reports by regulatory agencies should be included in the EIS.

4) If buildings, other structures, asphalt or concrete-paved surface areas are being planned to be demolished, an investigation should also be conducted for the presence of other hazardous chemicals, mercury, and asbestos containing materials (ACMs). If other hazardous chemicals, lead-based paints (LPB) or products, mercury or ACMs are identified, proper precautions should be taken during demolition activities. Additionally, the contaminants should be remediated in compliance with California environmental regulations and policies.

5) Future project construction may require soil excavation or filling in certain areas. Sampling may be required. If soil is contaminated, it must be properly disposed and not simply placed in another location onsite. Land Disposal Restrictions (LDRs) may be applicable to such soils. Also, if the project proposes to import soil to backfill the areas excavated, sampling should be conducted to ensure that the imported soil is free of contamination.

6) Human health and the environment of sensitive receptors should be protected during any construction or demolition activities. If necessary, a health risk assessment overseen and approved by the appropriate government agency should be conducted by a qualified health risk assessor to determine if there are, have been, or will be, any releases of hazardous materials that may pose a risk to human health or the environment.

7) If the site was used for agricultural, livestock or related activities, onsite soils and groundwater might contain pesticides, agricultural chemical, organic waste or other related residue. Proper investigation, and remedial actions, if necessary, should be conducted under the oversight of and approved by a government agency at the site prior to construction of the project.

8) If it is determined that hazardous wastes are, or will be, generated by the proposed operations, the wastes must be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Division 4.5). If it is determined that hazardous wastes will be generated, the facility should also obtain a United States Environmental Protection Agency Identification Number by contacting (800) 618-6942. Certain hazardous waste treatment processes or hazardous materials, handling, storage or uses may require authorization from the local Certified Unified Program Agency (CUPA). Information about the requirement for authorization can be obtained by contacting your local CUPA.

9) DTSC can provide cleanup oversight through an Environmental Oversight Agreement (EOA) for government agencies that are not responsible parties, or a Voluntary Cleanup Agreement (VCA) for private parties. For additional information on the EOA or VCA, please see www.dtsc.ca.gov/SiteCleanup/Brownfields, or contact Ms. Maryam Tasnif-Abbasi, DTSC's Voluntary Cleanup Coordinator, at (714) 484-5489.

If you have any questions regarding this letter, please contact Rafiq Ahmed, Project Manager, at rahmed@dtsc.ca.gov, or by phone at (714) 484-5491.

Sincerely,

Greg Holmes
Unit Chief
Brownfields and Environmental Restoration Program

cc: Governor's Office of Planning and Research
State Clearinghouse
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CEQA Tracking Center
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CEQA # 3369

Western
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Working to protect and restore Western Watersheds

October 13, 2011

By Email

Lynnette Elser, Planning and Environmental Coordinator
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< CAdesertharvest@blm.gov >
< lelser@blm.gov >

Re: Notice of Intent To Prepare an Environmental Impact Statement for the Proposed enXco Desert Harvest Solar Farm Project, Riverside County, CA and Possible Land Use Plan Amendment. Federal Register, September 15, 2011.

Dear Ms. Elser:

On behalf of Western Watersheds Project and myself, please accept the following scoping comments as you embark on the preparation of an Environmental Impact Statement for the Proposed enXco Desert Harvest Solar Farm Project, Riverside County, CA and Possible Land Use Plan Amendment.

Western Watersheds Project works to protect and conserve the public lands, wildlife and natural resources of the American West through education, scientific study, public policy initiatives, and litigation. Western Watersheds Project and its staff and members use and enjoy the public lands, including the lands at issue here, and its wildlife, cultural and natural resources for health, recreational, scientific, spiritual, educational, aesthetic, and other purposes.

Western Watersheds Project recognizes that global climate change poses significant new challenges to our already stressed public lands. However, while climate change threatens biodiversity and entire fragile ecosystems, our response to climate change also threatens our public lands and their wildlife. Accordingly, WWP supports responsible development of power plant projects. Responsible development requires the use of comprehensive, ecologically sound, science-based analysis in determining power plant locations. This is best achieved by focusing energy developments on private or severely altered lands that are located close to points of use to minimize new disturbance or further fragmentation of fragile, native ecosystems. The ecological impacts from renewable energy project development should be fully mitigated with significant and lasting actions.

According to the notice of intent, the applicant, enXco, has requested a right-of-way (ROW) authorization to construct, operate, maintain, and decommission the Desert Harvest Project. The proposed project would be located on BLM-administered lands in Riverside County about 6 miles north of the rural community of Desert Center, California. This location is immediately south of the recent approved Desert Sunlight Solar Farm Solar. The overall site layout and generalized land uses would include a substation, an administration building, operations and maintenance facilities, transmission line, and temporary construction lay down areas, with a total proposed project footprint of approximately 1,280 acres. The project's 230-kilovolt (kV) generation interconnection transmission line would either be via the First Solar Desert Sunlight 230-kV gen-tie (as a shared facility), or would be located on private and BLM-administered lands and would utilize a planned 230- to 500-kV substation (referred to as the Red Bluff Substation). The Red Bluff Substation would connect the project to the Southern California Edison regional transmission grid. If approved, project construction would begin in late 2013 and would take 9–12 months to complete. Since the proposed Desert Harvest Project site was not previously identified as suitable, authorization of the Desert Harvest Project will require an amendment of the CDCA Plan.

This project will have direct, indirect and cumulative impacts on some of the desert's most sensitive resources including species listed under the Endangered Species Act such as desert tortoise and on important cultural resources. The BLM has identified the following preliminary issues: air quality, biological resources, recreation, cultural resources, water resources, geological resources, special management areas, land use, noise, paleontological resources, public health, socioeconomic, soils, traffic and transportation, and visual resources.

Specific issues of concern that should be addressed in the NEPA documents to ensure compliance with NEPA and to ensure that NEPA's requisite "hard look" at the environmental impacts include:

(1) Range of Alternatives.

The NEPA implementing regulations specify that NEPA documents must analyze a full range of alternatives including "reasonable alternatives not within the jurisdiction of the lead agency" (40 C.F.R. § 1502.14). Based on the information and analysis presented in the sections on the Affected Environment (40 C.F.R. § 1502.15) and the Environmental Consequences (40 C.F.R. § 1502.16), the NEPA document should present the environmental impacts of the proposed action and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public

In order to comply with the spirit and letter of NEPA, the EIS must consider alternatives that meet the project goals and not simply propose "straw man" alternatives that can then be dismissed from further consideration. We suggest that the agencies consider the following reasonable alternatives in addition to any proposed action:

(a) No Action Alternative as is required by NEPA.
(b) Public lands that are not desert tortoise habitat.

(c) A private lands alternative under which the project is built on private lands only.
(d) A distributed energy alternative using "roof top" solar to avoid the need for construction of a power plant.
(e) An alternative that removes the southwestern separated piece of the project to avoid impacts to the significant population of Emory's crucifixion-thorn (*Castela emoryi*) that occurs there.
(f) An alternative plan amendment that will protect sensitive resources by making the proposed project site unavailable for energy development.

Full analysis of these alternatives will help clarify the need for the proposed project, provide a baseline for identifying and fully minimizing resource conflicts, facilitate compliance with the BLM's FLPMA requirement to prevent the unnecessary and undue degradation of public lands and its resources, and will help provide a clear basis for making an informed decision.

(2) Biological Resources.

The BLM has a statutory obligation to protect sensitive and special status species. Irrespective of whether or not a species has special status, the NEPA requires the BLM take a "hard look" at the environmental impacts of its proposed actions on locally occurring species and their habitats to ensure that its actions do not result in significant environmental impacts. The NEPA documents must describe, clearly characterize and identify biological resources that will be impacted by each alternative. The EIS should carefully consider and analyze potential impacts to all species that would be affected by the project. It should provide detailed vegetation and wildlife maps to facilitate public input into the process.

(A) Desert Tortoise.

The NEPA/CEQA documents must describe, clearly characterize and identify the desert tortoise population that will be impacted by each alternative.

The proposed project site is in California's Colorado Desert within the Colorado Desert Tortoise Recovery Unit. The project site is currently classed as BLM Category III desert tortoise habitat. The management guidelines for Category III desert tortoise habitat are to "Limit tortoise habitat and population declines to the extent possible by mitigating impacts" (Spang et al. 1988).

The proposed project site is occupied desert tortoise habitat. Detailed surveys are required to determine the number of tortoises that would be impacted. The EIS should also consider the status of the tortoises in the affected recovery unit. The latest report from the Desert Tortoise Recovery Office cites a 37% in tortoise density in the Eastern Colorado Recovery Unit between 2005 and 2007.[1]

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[1] USFWS. 2009. Range-wide Monitoring of the Mojave Population of the Desert Tortoise: 2007 Annual Report. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada.

The project will directly, indirectly and cumulatively impact desert tortoises. These impacts include habitat loss; habitat disturbance; fragmentation of habitat and decreased viability of fragmented populations; loss of connectivity; potential increases in predators such as ravens and coyotes; introduction, establishment and spread of invasive plants and weeds; increased fire risk; increased human presence; and increased use of roads.

The NEPA analysis must consider impacts from the proposed project on connectivity between desert tortoise populations. Disruption of connectivity could reduce gene flow and impair desert tortoise recovery and must be addressed in the EIS.

Maintaining connectivity is important especially given the threats posed by global climate change. As the USFWS 2008 Draft Revised Recovery Plan notes,

> "Climatic regimes are believed to influence the distribution of plants and animals through species-specific physiological thresholds of temperature and precipitation tolerance. Warming temperatures and altered precipitation patterns may result in distributions shifting northward and/or to higher elevations, depending on resource availability (Walther et al. 2002). We may expect this response in the desert tortoise to reduce the viability of lands currently identified as "refuges" or critical habitat for the species." (USFWS 2008 at 133)

The proposed project may result in the need for translocation of desert tortoises. BLM Handbook 1745 - Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife, and Plants - requires that "Decisions for making introductions, transplants, or reestablishments should be made as part of the land use planning process (see BLM Manual Section 1622). Releases must be in conformance with approved RMPs. A Land Use Plan Amendment must be prepared for proposed releases if management direction is not provided in the existing Land Use Plan (see BLM Manual Section 1617, emphasis added)." There is no consideration in the current CDCA Plan for large-scale desert tortoise translocations. Therefore, the BLM will need to amend the CDCA Plan or develop a desert tortoise translocation plan if this project moves forward. BLM Handbook 1745 requires that activity plans for translocations must be site-specific and include "Site-specific and measurable vegetation/habitat population objectives which are based on existing ecological site potential/condition, habitat capability, and other important factors." The BLM must include a detailed translocation plan for the project in its NEPA documentation.

The NEPA documents should provide a detailed review and analysis of the direct, indirect and cumulative impacts of the proposed project and all associated infrastructure including roads and transmission lines on the Colorado desert tortoise recovery unit.

(B) Desert Bighorn Sheep.

The proposed project site is located between the Eagle Mountains and Coxcomb Mountains bighorn sheep demes and may provide connectivity for bighorn sheep moving between them. The NECO Plan has a biological goal of maintain habitat connectivity within and between bighorn sheep demes and requires "Installation of new roads, fences and other linear projects will be mitigated to consider passage of bighorn sheep" [NECO Plan at 2-44]. The

NEPA documents should review all direct, indirect and cumulative impacts to this species including impacts to linkage habitat and connectivity.

(C) Birds.

The BLM has a statutory obligation to protect sensitive and special status species. Irrespective of whether or not a species has special status, the NEPA requires the BLM take a hard look at the environmental impact of its proposed actions on locally common species to ensure that its action does not result in significant environmental impacts. The NECO Plan has specific language that the BLM must follow including requiring that "The fragmenting affects of projects should be considered in the placement, design, and permitting of new projects." [NECO Plan at 2-43]. For projects in habitat for burrowing owl, *Athene cunicularia*, the NECO Plan requires the BLM to "Limit construction activity period to September 1 – February 1 if burrowing owls are present in a project area." [NECO Plan at 2-56]

There are a number of bird species that occur on the proposed project site or in the vicinity that are state protected, NECO special status species, and/or BLM sensitive species. These include Golden Eagle (*Aquila chrysaetos*), Loggerhead Shrike (*Lanius ludovicianus*), Western Burrowing Owl (*Athene cunicularia hypugaea*), Le Conte's Thrasher (*Toxostoma lecontei*), Crissal Thrasher (*Toxostoma crissale*), Swainson's hawk (*Buteo swainsonii*), Vaux's Swift (*Chaetura vauxi*), and Brewer's Sparrow (*Spizella breweri*), prairie falcon (*Falco mexicanus*), and mountain plover (*Charadrius montanus*).

In their study of the Solar One project, McCrary *et al.*, found that the most frequent form of avian mortality was collision with structures (McCrary *et al.*, 1986[2]). The proposed Stateline Solar project site is located close to Primm golf course which has a number of water features including a lake. These water features draw birds into the immediate vicinity of the Project. McCrary et al., 1986 specifically recommend avoiding siting power projects in close proximity to open water to reduce the impact to birds. As McCrary *et al* point out, reflective surfaces are especially prone to collisions. Collisions accounted for 75% of the bird deaths. McCray et al found that at least 22 different bird species suffered collision fatalities. The proposed project will establish a field of thousands of PV panels with highly reflective surfaces in the PV array. While many of the birds that use the project site are active during the day, some forage at night. However, even strictly diurnal species will take to flight at night if they disturbed. Thus the risk of risk of bird collision with the PV panels is round-the-clock.

The NEPA analysis should include a full and frank analysis of risks to resident and migratory birds including to golden eagles and determine the collision risks. It should characterize bird flight patterns, and should quantify anticipated avian deaths.

(D) Other Sensitive Wildlife Species.

A number of other state protected species, NECO special status species and BLM sensitive species of wildlife occur on the project or in the vicinity including the Palm Springs

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[2] McCrary, M. D., McKernan, R. L., Schreiber, R. W., Wagner ,W. D. and Sciarrotta, T. C. 1986. Avian Mortality at a Solar Energy Power Plant. Journal of Field Ornithology, 57(2): 135- 141.

round-tailed ground squirrel (*Spermophilus tereticaudus chlorus*), Mojave fringe-toed lizard (*Uma scoparia*), chuckwalla (*Sauromalus ater*), California leaf-nosed bat (*Macrotus californicus*), Pallid bat (*Antrozous pallidus*), other rat bat species, American badger (*Taxidea taxus*), mountain lion (*Puma concolor*), and burro deer (*Odocoileus hemionus eremicus*).

(E) Rare and Sensitive Plant Species.

The southwestern piece of the project overlies a significant population of Emory's crucifixion-thorn, *Castela emoryi*. According to the NECO Plan, Emory's crucifixion-thorn found in locally restricted sites in the southern Mojave and Sonoran deserts with only 13 records from the NECO Plan area. NECO Plan at 3-24.

A number of other rare plants occur on the project or in the vicinity including the Coachella Valley Milkvetch (*Astragalus lentiginosus* var. *coachellae*), California ditaxis (*Ditaxis serrata* var. *californica*), foxtail cactus (*Coryphantha alversonii*), slender-spined all-thorn (*Koeberlinia spinosa* ssp. *tenuispina*), and desert devil's claw (*Proboscidea althaeifolia*).

(F) Rare Habitats and Vegetation Communities.

There are rare desert woodland communities present along washes in the project area and stands of ironwood. These are important habitats in their own right but also because they provide very important habitats for wildlife and other plants. The NEPA documents should inventory the vegetation communities present on the site and explain for each alternative considered what avoidance measures will be adopted to minimize impacts to any rare desert communities.

(3) Invasive Species.

Invasive weeds grow easily wherever the natural vegetation and biological soil crusts are disturbed. The disturbance to the soil and natural vegetation that will occur as a result of the construction and maintenance of the proposed transmission line must not be allowed to establish a "weed corridor" across the landscape. Once established, weeds are almost impossible to remove permanently.

Invasive plants and weeds are threats to native habitat, rare plants, and sensitive species. They pose an immense fire hazard. Using chemicals to kill weeds requires exposing the environment, species, and watershed area to a toxic substance which can be the source of further damage to environmental and human health. Manual weed control requires much human effort, machinery, and can cause even more disturbance, leading to erosion, disturbance, and, in some cases, more weeds. The NEPA analysis must take a hard look at the impacts of the project on invasive weeds and should carefully consider how invasive plants and weeds will be managed and controlled.

(4) Hazards and Hazardous Materials.

The NEPA analysis should disclose any potentially toxic or hazardous wastes that may be associated with these projects during project construction, operation, and maintenance including pesticides and herbicides.

(5) Fire Prevention and Suppression.

The NEPA analysis should address the effects that each alternative for each project may have on wildfire risks. Wildfires are becoming increasingly common in the Mojave Desert facilitated by the spread of invasive weeds and climate change. Wildfires can result in type conversion of large expanses of habitat. Wildfires could be caused by construction or operation of the transmission lines. Development of roads and transmission lines could encourage increased motorized vehicle access which increases fire risk especially when coupled with the spread of invasive weeds.

(6) Desert Washes, Ephemeral Streams and Soils.

Desert washes, drainage systems, and washlets are very important habitats for plants and animals in arid lands. Water concentrates in such places, creating greater cover and diversity of shrubs, bunch grasses, and annual grasses and forbs. The topography is often more varied, as are soil types and rock types and sizes, creating diverse sites for burrows, caves, and other shelters. The resulting "habitats" tend to attract more birds, mammals, reptiles, and invertebrates. For example, desert tortoises spend disproportionately more time in washes than they do on "flat" areas.[3] The wash habitat impacted by each alternative should be evaluated and appropriate mitigations made for streambed alterations.

Soil erosion on low fill slopes and steeply graded areas could result in sedimentation of water bodies. Changes in hydrology and soil movements may impact rare plants and habitats for sensitive species in the surrounding area, and may impact burrowing species such as the desert tortoise.

(7) Cultural & Paleontological Resources.

The Mojave Desert is rich in structures and artifacts of significant cultural value that are irreplaceable once lost. A Class III cultural resources survey and report for the DSSF Project is needed to satisfy the requirements of NEPA and the National Historic Preservation Act. The DEIS should discuss and analyze all impacts to paleontological and Native American cultural resources. Building new transmission lines could cause physical damage to artifacts and sites, expose cultural resources to looters, and could increase fires due to soil disturbance and subsequent weed invasion placing these cultural resources at risk of future damage.

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[3] Jennings, B.J. 1997. Habitat Use and Food Preferences of the Desert Tortoise, *Gopherus agassizii*, in the Western Mojave Desert and Impacts of Off-Road Vehicles. Proceedings: Conservation, Restoration, and Management of Tortoises and turtles—An International Conference, pp. 42–45. New York Turtle and Tortoise Society.

(8) Global Climate Change.

Department of the Interior Order No. 3226 mandates that the BLM must consider the impacts of each proposed alternative with respect to global climate change in its NEPA reviews. The agencies should use the recently released USGS desert tortoise habitat model to determine likely changes in desert tortoise habitat quality in the area and the importance of the desert tortoise habitat. In addition to addressing climate change in the cumulative effects analysis, the EIS should address the carbon footprint of the project and any losses to carbon storage and sequestration it will engender.

(9) Visual Resources.

These public lands are close to Joshua Tree National Park and its Wilderness areas. The EIS should fully review the impacts of each alternative on visual resources including the effects on wilderness character and values.

(10) Water Issues.

The NEPA documents must provide information on the water needs of this power plant both in the construction and operation phases and the source of these waters. The EIS must fully analyze impacts to the local and regional water reserves.

(11) Environmental Justice Issues.

The BLM's NEPA analysis must fully consider environmental justice concerns during this permitting process. The proposed project will be located near the community of Desert Center. That community already has one major solar project being constructed on nearby public lands. This project will further restrict access to public lands by members of the Desert Center community. They will bear the brunt of any visual impacts, impacts to water resources, impacts to other resources, and the consequences of the industrialization of this relatively rural community.

(12) Cumulative Effects.

The NEPA documents must consider the cumulative effects of this project in combination with all the other consumptive uses that are occurring on these public lands including all the other energy projects being built in the region, off road vehicle activity, and mining. New transmission line projects have the potential to open up more lands to energy (or other) development, placing wide swaths of habitat at risk, and greatly increase degradation and fragmentation of habitats and important wild land areas and have lasting and damaging impacts.

(13) Monitoring Programs.

The NEPA documents must explain the monitoring programs that will be in place to monitor the short and long term impacts of the project. This should include the timelines, and estimated costs and sources of funding for the monitoring programs.

(14) Mitigation.

BLM is obligated under FLPMA to “minimize adverse impacts on the natural, environmental, scientific, cultural, and other resources and values (including fish and wildlife habitat) of the public lands involved.” [43 U.S.C. §1732(d)(2)(a)] Other laws, including the Endangered Species Act and the California Endangered Species Act also entail the need for mitigations to minimize impacts. BLM is required to consider measures to mitigate potential environmental consequences in its NEPA analysis. [40 C.F.R. § 1502.16] The NEPA implementing regulations define "Mitigation" to include:

> (a) Avoiding the impact altogether by not taking a certain action or parts of an action.
> (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
> (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
> (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
> (e) Compensating for the impact by replacing or providing substitute resources or environments.
> [40 C.F.R. §1508.20]

The DEIS should explain the mitigation measures that will meet all these requirements including avoidance. The primary mitigation for impacts to desert tortoise and rare plants should be avoidance or the acquisition of occupied compensation habitat since this is the only mitigation measure that will offset the habitat loss. Desert tortoise habitat lands should be acquired within the affected Eastern Colorado Recovery Unit. Acquisition of habitat should be accompanied with enhancement measures to compensate for the net loss of habitat. These measures may include removal of livestock, fencing where appropriate, invasive species control, small scale restoration projects, and route closures.

The DEIS should describe the restoration and rehabilitation activities that will be required for habitat disturbed during construction. For example, construction material yards will lose their native vegetation, have their soils compacted, and increase the amount of wind and water erosion while leaving these areas at an increased risk of weed invasion. Transporting materials, labor, and equipment in and out of construction areas will also have their own set of impacts that must be minimized. Construction may also require the use of “temporary” roads that will require extensive rehabilitation if they are not to become permanent intrusions on the landscape. Rehabilitation of desert habitat is a long, slow and uncertain process.

Western Watersheds Project thanks you for the opportunity to submit scoping comments on the proposed solar plant project. Please keep Western Watersheds Project on the list of interested public for this project. If we can be of any assistance or provide more information please feel free to contact me by telephone at (818) 345-0425 or by e-mail at <mjconnor@westernwatersheds.org>.

Yours sincerely,

Michael J. Connor, Ph.D.
California Director
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10/17/2011

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RE: Comments on the Notice of Intent ("NOI") to prepare an Environmental Impact Statement (EIS) for the Proposed enXco Desert Harvest Solar Farm Project, Riverside County, CA and Possible Land Use Plan Amendment. 76 FR 57073.

Dear Ms. Elser,

Please accept the Center for Biological Diversity's comments on the Notice of Intent ("NOI") to prepare an Environmental Impact Statement (EIS) for the Proposed enXco Desert Harvest Solar Farm Project (the project), Riverside County, and Possible Land Use Plan Amendment in compliance with the National Environmental Policy Act of 1969 (NEPA), as amended, and the Endangered Species Act (ESA), on the impacts of the project. The Center is a non-profit environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. These scoping comments are submitted on behalf of the Center's 320,000 staff, members and online activists throughout California and the western United States many of whom live in southern California and enjoy visiting, studying, photographing and hiking in the California Desert Conservation Area, including the areas on and around the project site.

The development of renewable energy is a critical component of efforts to reduce greenhouse gas emissions, avoid the worst consequences of global warming, and to assist California in meeting emission reductions. The Center strongly supports the development of renewable energy production, and the generation of electricity from solar power, in particular. However, like any project, proposed solar power projects should be thoughtfully planned to minimize impacts to the environment. In particular, renewable energy projects should avoid impacts to sensitive species and habitat, and should be sited in proximity to the areas of electricity end-use in order to reduce the need for extensive new transmission corridors and the efficiency loss associated with extended energy transmission. Only by maintaining the highest environmental standards with regard to local impacts, and effects on species and habitat, can renewable energy production be truly sustainable.

Arizona • California • Nevada • New Mexico • Alaska • Oregon • Montana • Illinois • Minnesota • Vermont • Washington, DC

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The Desert Harvest Solar Farm Project is proposed solar photovoltaic (PV) generating facility with a proposed output of 150 megawatts and a project footprint covering approximately 1,280 acre of in-tact desert landscape. It will include the PV arrays, and will either share First Solar's Desert Sunlight 230-kV gen-tie or it would locate its own 230-kV gen-tie on private and BLM-administered lands and would connect to the planned Red Bluff Substation. This project requires a proposed land use plan amendment to the 1980 California Desert Conservation Area (CDCA) Plan, as amended.

The Energy Production and Utility Corridors section of the California Desert Conservation Area Plan (1980) as amended requires at minimum that the following resource issues be addressed:

1) Consistency with the Desert Plan, including designated and proposed planning corridors;
2) Protection of air quality;
3) Impact on adjacent wilderness and sensitive resources;
4) Visual quality;
5) Cooling-water source(s);
6) Waste disposal;
7) Seismic hazards; and
8) Regional equity.

Additionally, a number of other resources are of concern to us and need to be addressed in detail as follow below:

Biological Resources

Based on the proposed project description, it appears that this site is proposed on an ecologically functional desert landscape that may host a suite of rare species. Careful documentation of the current site resources is imperative in order to analyze how best to site the project to avoid and minimize impacts and then to mitigate any unavoidable impacts.

Biological Surveys and Mapping

The Center requests that thorough, seasonal surveys be performed for sensitive plant species and vegetation communities, and animal species under the direction and supervision of the BLM and resource agencies such as the US Fish and Wildlife Service and the California Department of Fish and Game. Full disclosure of survey methods and results to the public and other agencies without limitations imposed by the applicant must be implemented to assure full NEPA/ESA compliance.

Confidentiality agreements should not be allowed for the surveys in support of the proposed project. Surveys for the plants and plant communities should follow California Native Plant Society (CNPS) and California Department of Fish and Game (CDFG) floristic survey guidelines[1] and should be documented as recommended by CNPS[2] and California Botanical

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[1] http://www.cnps.org/cnps/rareplants/inventory/guidelines.php and http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/Protocols_for_Surveying_and_Evaluating_Impacts.pdf

[2] http://www.cnps.org/cnps/archive/collecting.php

Society policy guidelines. A full floral inventory of all species encountered needs to be documented and included in the EIS. Surveys for animals should include an evaluation of the California Wildlife Habitat Relationship System's (CWHR) Habitat Classification Scheme. All rare species (plants or animals) need to be documented with a California Natural Diversity Data Base form and submitted to the California Department of Fish and Game using the CNDDB Form[3] as per the State's instructions[4].

The Center requests that the vegetation maps be at a large enough scale to be useful for evaluating the impacts. Vegetation/wash habitat mapping should be at such a scale to provide an accurate accounting of wash areas and adjacent habitat types that will be directly or indirectly affected by the proposed activities. A half-acre minimum mapping unit size is recommended, such as has been used for other development projects. Habitat classification should follow CNPS' Manual of California Vegetation (Sawyer et. al. 2009).

Adequate surveys must be implemented, not just a single season of surveys, in order to evaluate the existing on-site conditions. Due to unpredictable precipitation, desert organisms have evolved to survive in these harsh conditions and if surveys are performed at inappropriate times or year or in particularly dry years many plants that are in fact on-site may not be apparent during surveys (ex. annual and herbaceous perennial plants).

Impact Analysis

The EIS must evaluate all direct, indirect, and cumulative impacts to sensitive habitats, including impacts associated with the establishment of unpermitted recreational activities, the introduction of non-native plants, the introduction of lighting, noise, and the loss and disruption of essential habitat due to edge effects.

A number of rare resources have high potential to occur on this site including:

Common Name	*Scientific Name*	*State/Federal/Other Status*
Desert Tortoise	*Gopherus agassizii*	*CT/FT*
Mojave fringe-toed lizard	*Uma scoparia*	*CSC*
Burrowing owl	*Athene cunicularia hypugaea*	*CSC/BLM SS*
LeConte's thrasher	*Toxostoma lecontei*	*CSC*
Bendire's thrasher	*Toxostoma bendirei*	*CSC*
Loggerhead shrike	*Lanius ludovicianus*	*CSC/FSC/MB*
Prairie falcon	*Falco mexicanus*	*CSC/MB*
Nelson's bighorn sheep	*Ovis canadensis nelsonii*	*Game species*
Las Animas colubrine	*Colubrina californica*	*CNPS List 2.3*
Coves' cassia	*Cassia covesii*	*CNPS List 2.2*
Harwood's milkvetch	*Astragalus insularis var. harwoodii*	*CNPS List 2.2*
California ayenia	*Ayenia compacta*	*CNPS List 2.3*
Alverson's foxtail cactus	*Coryphantha alversonii*	*CNPS List 4.3*

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[3] http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/CNDDB_FieldSurveyForm.pdf
[4] http://www.dfg.ca.gov/biogeodata/cnddb/submitting_data_to_cnddb.asp

California ditaxis	*Ditaxis serrata var. californica*	*CNPS List 3.2*
Coachella Valley Milkvetch	*Astragalus lentiginosus var. coachellae*	*FE/CNPS 1.2/BLM SS*

State Designation

CT State listed as threatened. Species that although not presently threatened in California with extinction are likely to become endangered in the foreseeable future.
CSC California Department of Fish and Game "Species of Special Concern." Species with declining populations in California.

Federal Designation

FE Federally listed as endangered.
FT Federally listed as threatened.
MB Migratory Bird Treaty Act. of 1918. Protects native birds, eggs, and their nests.
BCC U.S. Fish and Wildlife Service Bird of Conservation Concern.
BLM SS BLM Sensitive Species.

Other

California Native Plant Society (CNPS)
1B.1 Plant rare, threatened or endangered in California and elsewhere, and very threatened.
2.2 Plant rare, threatened or endangered in California, but more common elsewhere, and fairly threatened in CA.
2.3 Plant rare, threatened or endangered in California, but more common elsewhere, and not very threatened in CA.
4.3 Plants of a limited distribution, and not very threatened in CA.

All of these species have been identified as occurring in the general vicinity of the project site.[5] Therefore, the EIS must adequately address the impacts and propose effective ways to avoid, minimize, and mitigate the impacts to these resources through alternatives including alternative siting and alternative on-site configurations.

Desert Tortoise

The desert tortoise is continuing to decline throughout its range despite being under federal and state Endangered Species Acts protection as threatened[6]. The proposed Desert Harvest project, despite being outside desert wildlife management areas (DWMAs) as identified in the Northern and Eastern Colorado Plan[7], will likely have desert tortoise occurring on site, because 1) it basically connects the BLM DWMA which lies directly south and west of the proposed project site to Joshua Tree National Park and 2) tortoise were found on the Desert Sunlight project site directly to the north of this proposed project. The EIS must clearly address alternative proposals for avoiding, minimizing and mitigating the impacts to the desert tortoise and any occupied habitat.

The BLM must first look at ways to avoid impacts to the desert tortoise, for example, by identifying and analyzing *alternative sites* outside of desert tortoise occupied habitat or in areas that have already been severely disturbed by other prior land use as well as alternative project configurations that would avoid or significantly reduce impacts. The BLM must also look at ways to minimize any impacts that it finds are unavoidable, for example, by limiting the ground disturbing activities from the project and limiting access roads to the project. Acquisition of lands that will be managed in perpetuity for conservation must be included as part of the strategy to mitigate impacts to the tortoise, mitigation lands should also be high-quality habitat and, at minimum 5:1 mitigation should be provided of all acres of desert tortoise habitat destroyed. Set-aside conservation lands are particularly important because the project as proposed appears to have little or no compatibility with on-site conservation for desert tortoise.

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[5] CNDDB 2010 http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp

[6] USFWS 2010 http://www.fws.gov/nevada/desert_tortoise/documents/reports/2010/2010_DRAFT_Rangewide_Desert_Tortoise_Population_Monitoring.pdf

[7] BLM 2006 http://www.blm.gov/ca/st/en/fo/cdd/neco.html

Translocation as a long-term strategy for minimizing and mitigating impacts to desert tortoise may be a tool for augmenting conservation of the desert tortoise[8], but it cannot substitute for other mitigation such as preservation of habitat. Moreover, to date, translocation does not have a proven track record of success. If translocation (for any species) is to be a part of the mitigation strategy, a detailed final plan must be included as apart of the EIS, and include methodologies for determining appropriate conservation area where tortoises may be translocated, impacts to existing "host" tortoise populations that occur on the translocation site, when/how the tortoise are to be translocated, how tortoise diseases will be addressed, and requisite monitoring of host and translocated tortoises, etc.. Monitoring of the translocated and existing "host" tortoises needs to occur for a long enough time period that is realistic to evaluate success of the translocation –10 years may be a more realistic minimum for tracking impacts to this long lived species. Success criteria for translocation must also be clearly identified. Any temporary project site needs to be fenced with tortoise proof fencing during construction and the permanent project sites need to be fenced to prevent tortoise mortality. All associated roads also need to be fenced.

An aggressive raven prevention plan also needs to be developed as part of the EIS and followed during project development and implementation.

Burrowing Owl

Burrowing owls are continuing to decline in California. If burrowing owls are identified on the site, at least one alternative should evaluate the reduction of impacts to this rare species by moving the project away from the nesting burrows. Additionally, acquisition lands may be required as part of the mitigation and will need to be managed in perpetuity for conservation. Mitigation lands should be high-quality habitat and, at minimum 5:1 mitigation should be provided of all acres of burrowing owl habitat destroyed. Additional measures for avoidance and minimization should also be incorporated into the evaluation of impacts to this species.

Other Rare Species

The diversity of rare species found across the landscape near and on the Desert Harvest site is impressive and suggests that the proposed project site is part of a larger ecologically intact and functioning unit[9]. The BLM must clearly address proposals for avoiding, minimizing and mitigating the impacts to all of the rare species that utilize the sites for part or all of their lifecycle.

Acquisition of lands that will be managed in perpetuity for conservation must be included as part of the strategy to avoid, minimize and mitigate impacts to the other species found on site as well. Acquisition is particularly important for these species because the proposed project appears to have little compatibility with any type of on-site conservation of plant communities or wildlife.

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[8] Field et al 2007

[9] CNDDB 2010 http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp

For the rare plants, avoidance is preferable because of the general lack of success in transplanting rare plants[10]. If transplantation is to be a part of the mitigation strategy, a detailed final plan must be included as part of the EIS on the methodology for determination of appropriate conservation area where plants may be transplanted, when/how plant are to be transplanted and identification of success criteria for transplantation. Monitoring of the transplanted plants needs to occur for a time period that is realistic to evaluate long-term success of the plants.

Locally Rare Species

The Center requests that the EIS also evaluate the impact of the proposed project on locally rare species (not merely federal- and state-listed threatened and endangered species). The preservation of regional and local scales of genetic diversity is very important to maintaining species in perpetuity especially in light of global climate change. Therefore, we request that all species found at the edge of their ranges or that occur as disjunct locations be evaluated for impacts by the proposed permitted activities.

Sand Transport Corridor

The site has potential to be sited on the sand transport corridor that originates in Joshua Tree National Park, through the Palen and Ford Dry Lake Valleys, across Interstate 10 to the agricultural areas adjacent to Blythe. This corridor provides sand habitat for a suite of sand-specialists, including the Mojave fringe-toed lizard that reaches its most southern edge of its range in this area. Avoidance should be the first step, but if impacts to habitat as well as disruption to the sand transport corridor are anticipated they must be identified, minimized and analyzed.

Water Resources

The project appears to impact on-site drainages on the project site. The EIS document must clarify the impacts to the jurisdictional Waters of U.S. and the Water of the State of California, and avoid, minimize and mitigate any impacts. Impacts should be avoided to the greatest extent possible and if impacts remain they must be mitigated. In doing so, any reroute of waters and drainage on the site must assure that downstream processes are not impacted.

An evaluation of the effect of additional groundwater pumping (in conjunction with other groundwater issues [pumping, nitrate plume etc.] in the basin) on the water quality in the basin and surface water resources, and its effect on the native plant and animal species and their habitats need to be included in the EIS.

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[10] Fiedler 1991

Alternatives

The EIS must include a robust analysis of alternatives, including a private lands alternative and alternatives using other technologies including distributed generation. The stated objectives of the project must not unreasonably constrain the range of feasible alternatives evaluated in the EIS. The BLM must establish an independent set of objectives that do not unreasonably limit the EIS's analysis of feasible alternatives including alternative sites. At a minimum alternatives including the no-action alternative, an environmentally preferred alternative and an alternative where power generation is sited adjacent to power consumption need to be included.

Other Issues

The construction and operation of the proposed facilities will also increase greenhouse gas emissions and those emissions should be quantified and off-set. This would include the manufacture and shipping of components of the project and the car and truck trips associated with construction and operations. Similarly, such activities will also impact air quality and traffic in the area and these impacts should be disclosed, minimized and mitigated as well. For mobile sources, since consistency with the AQMP will not necessarily achieve the maximum feasible reduction in mobile source greenhouse emissions, the EIS should evaluate specific mitigation measures to reduce greenhouse emissions from mobile sources.

Fire Impacts

Because the any industrial project increases the potential for human-caused fire to occur on site, fire prevention including best management practices must be addressed and clearly identified in the EIS - not only on-site protection of resources, but also preventing fire from moving into the adjacent lands. Fire is incredibly detrimental to desert ecosystems, resulting in degradation of the habitat and if frequently reburned results in a type conversion to non-native vegetation[11].

Non-Native Plants

The EIS must identify and evaluate impacts to species and ecosystems from invasive exotics species. Many of these species invade disturbed areas, and then spread into wildlands. Fragmentation of intact, ecologically functioning communities further aides the spread and degradation of plant communities[12]. These factors for wildland weed invasions are present in the project, and their effect must be evaluated in the EIS. Additionally, landscaping with exotic species is often the vector for introducing invasive exotics into adjacent habitats. Invasive landscape species displace native vegetation, degrade functioning ecosystems, provide little or no habitat for native animals, and increase fire danger and carrying capacity[13] and should be banned from the project site.

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[11] Brooks and Draper 2006 http://www.nps.gov/moja/naturescience/upload/Fire%20congress%202006_brooks%20and%20draper_extended%20abstract.pdf

[12] Bossard et al 2000

Wildlife Movement

Because the project site is located within an identified California Essential Habitat Connectivity corridor[14], a thorough and independent evaluation of the project's impacts on wildlife movement is essential. The EIS must evaluate all direct, indirect, and cumulative impacts to wildlife movement corridors. The analysis should cover movement of large mammals, as well as other taxonomic groups, including small mammals, birds, reptiles, amphibians, invertebrates, and vegetation communities. The EIS should first evaluate habitat suitability within the analysis window for multiple species, including all listed and sensitive species. The habitat suitability maps generated for each species should then be used to evaluate the size of suitable habitat patches in relation to the species average territory size to determine the appropriate size and location of linkages and that they provide both live-in and move-through habitat. The analyses should also evaluate if suitable habitat patches are within the dispersal distance of each species. The EIS should address both individual and intergenerational movement (i.e., will the linkages support metapopulations of smaller, less vagile species). The EIS should identify which species would potentially utilize the proposed wildlife movement corridors under baseline conditions and after build out, and for which species they would not. In addition, the EIS should consider how wildlife movement will be affected by other planned approved, planned, and proposed development in the region as part of the cumulative impacts.

The EIS should analyze any proposed on-site wildlife movement corridors are wide enough to minimize edge effects and allow natural processes of disturbance and subsequent recruitment to function. The EIS should also evaluate whether the proposed wildlife movement corridors would provide key resources for species, such as host plants, pollinators, or other elements. For example, many species commonly found in washes depend on upland habitats during some portion of their cycle. Therefore, in areas with intermittent or perennial streams, upland habitat protection is needed for these species. Upland habitat protection is also necessary to prevent the degradation of aquatic habitat quality.

Cumulative Impacts

Because of the number of currently permitted and proposed projects in the projects' vicinity, the region, and the CDCA, a thorough analysis of the cumulative impacts from all of these projects on the resources needs to be included. Because the project site is within a proposed solar development zone in BLM's Draft Programmatic EIS for solar energy, projects located in the zone have the potential to cumulatively significantly impact the existing biological resources and ecological processes that currently exist within the zone. To date several projects have been permitted in the general vicinity, including the Desert Sunlight project directly to the north and the Genesis project to the east. Other proposed projects are well into the environmental review process, including the Palen project which recently changed from a solar thermal project to a PV project and therefore requires a reanalysis of project footprint and impacts. Additionally numerous other applications are included in the area. While the zone may be appropriate for some renewable energy development, especially on already disturbed private lands, the EIS must evaluate if the cumulative impact from the projects will cause significant unmitigable impacts not only to the zone but to the surrounding resources including Joshua Tree National Park, which already is impacted by border development on the south, east and west boundaries, as well as BLM identified Areas of Critical Environmental Concern (ACECs), Wildlife Habitat Management Areas (WHMAs) and federally designated Wilderness.

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[13] Brooks 2000

14 http://bios.dfg.ca.gov/

Thank you for your consideration of these comments. Please add us to the distribution list for the EIS and all notices associated with this project.

Sincerely,

Ileene Anderson
Biologist/Public Lands Desert Director
Center for Biological Diversity

cc via email
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October 13, 2011

Lynnette Elser,
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92553

lelser@blm.gov

Dear Ms Elser,

Please accept the following scoping comments for the Desert Harvest Project CASE FILE NUMBER: CACA-49491

Basin and Range Watch is a group of volunteers who live in the deserts of Nevada and California, working to stop the destruction of our desert homeland. Industrial renewable energy companies are seeking to develop millions of acres of unspoiled habitat in our region. Our goal is to identify the problems of energy sprawl and find solutions that will preserve our natural ecosystems and open spaces. We have visited the site of the Desert Harvest Solar project site and believe it would damage the resources of the area.

Purpose and Need: The Purpose and Need Statements in many BLM big solar EIS documents reflect a need to develop so many megawatts on so many acres of public lands. All alternatives are now defined by a Need reflecting the recent Secretarial Order 3283: Enhancing Renewable Energy Development on Public Lands.

The goals of Section 4 in Secretarial Order 3283 clearly state a need for environmental responsibility: *"the permitting of **environmentally responsible** wind, solar, biomass, and geothermal operations and electrical transmission facilities on the public lands;*

The Desert Harvest Solar Project in its proposed location would impact the desert tortoise, other wildlife, cultural resources, private property and Joshua Tree National Park. It would be inconsistent with the Best Management Practices concerning the National Environmental Policy Act, the Endangered Species Act, and the Federal Lands Management Policy Act, etc and can, in no way, be considered "environmentally responsible".

We would like to request that the Purpose and Need Statement reflect a need to protect and preserve habitat for sensitive species, preserve important ecological habitats, and to preserve sensitive cultural resources.

Alternatives:

A full range of alternatives should be considered in every EIS document. That is required by NEPA. This seems to be one of the biggest problems with most of them.

Following the guidelines of the National Environmental Policy Act, the final EIS should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public. In this section agencies shall:

(a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.

(b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.

(c) **Include reasonable alternatives not within the jurisdiction of the lead agency.**

(d) Include the alternative of no action.

(e) Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference.

(f) Include appropriate mitigation measures not already included in the proposed action or alternatives.

Alternatives for the Desert Harvest Project should include:

1. A No Action Alternative that designates a proposed site inappropriate for solar energy development.

2. Alternatives not within the jurisdiction of the lead agency. These should include a Distributed Generation Alternative and a Private Land Alternative. As pointed out above, these alternatives are required to be considered under NEPA. Recent "mandates" by the Interior Department discourage these alternatives, but these are worded carefully using terminology like "recommends". The fact is that there are no mandates that say that BLM can not consider an off site alternative to an individual project like the Desert Harvest Project. In fact, failure to do so when it is requested may be a violation of the National Environmental Policy Act.

In its original scoping letter on the recent Solar Programmatic Environmental Impact Statement, The Environmental Protection Agency has identified hundreds of thousands of acres of degraded and contaminated sites around the country which could generate up to 920,000 MW of solar generation.

3. Site Specific Alternatives which could be an alternative that avoids cultural sites, private lands or sensitive species. An alternative away from Joshua Tree National Park should be considered.

4. **OUR PREFERRED ALTERNATIVE** would be a No Action Alternative that designates a conservation status to the proposed project site. This alternative would also designate the site inappropriate for solar energy development.

5. Smart Solar Energy:

   Distributed generation in the built environment should be given much more full analysis, as it is a completely viable alternative. This project will need just as much dispatchable baseload behind it, and also does not have storage. But environmental costs are negligible with distributed generation, compared with this project. Distributed generation cannot be "done overnight," but neither can large transmission lines across hundreds of miles from remote central station plants to load centers. Most importantly, distributed generation will not reduce the natural carbon-storing ability of healthy desert ecosystems, will not disturb biological soil crusts, and will not degrade and fragment habitats of protected, sensitive, and rare species.

   Alternatives should be looked at that are in load centers, not closest to the project site. There is a need to consider the "macro" picture, the entire state, to look at maximum efficiency.

   A master comprehensive plan should exist before large expensive inefficient solar plants are sited and built out in the wildlands. This plan should carefully analyze the recreational and biodiversity resources of the Mojave Desert. A list of assumptions should be included detailing the plan for integrating various fuels mixes and technologies into each utility's plan, an overall state plan, and a national plan. Loads should be carefully analyzed to determine whether additional capacity is needed for peaking, intermediate, or baseload purposes. Unit size, which impacts capital and operating costs and unit capacity factors, has a direct bearing on the relative economics of one technology over another. A plan might recommend that smaller units built in cities and spaced in time offer a less risky solution than one large unit built immediately.

   Right now there is no utility plan, no state plan, and no national plan. Large-scale central station energy projects have been sited very far from load centers out in remote deserts, with the only criterion being nearness to existing transmission lines and natural gas lines. Very little thought has been given to the richness of biological resources, the cumulative impacts on visual scenery to tourists, the proximity to ratepayers, or the level of disturbance of the site.

The California Energy Commission says they will be a need to build many new efficient natural gas peaker or baseload plants to back up the renewable projects planned. Instead, the renewables should be distributed generation in load centers, which will provide much more efficiency, rather than inefficient remote central station plants that reduce biodiversity and require expensive transmission lines. This reduces the risk, as distributed generation is a known technology and has been proven in countries like Germany where incentive programs have been tested. Incentive programs can be designed in an intelligent manner to vastly increase distributed generation. Incentives for large remote projects are unproven to lower risk and may actually raise debt levels with runaway costs associated with poor sighting and higher-than-anticipated operating and maintenance costs.

Many renewable project developers have failed to consider reasonable or viable alternatives that could serve as solutions that everybody could live with. In the case of this particular project, conflicts with endangered species, cultural resources, storm water drainage erosion, viewscapes from National Parks and wilderness areas could all be avoided with a distributed generation alternative.

Proposed Action, Affected Environment and Environmental Consequences:

Air Quality:

Construction activity will go on for 2 to 3 years and will add to the cumulative impacts on air quality that have been inflicted upon the region by the adjacent Desert Sunlight Project.

The DEIS will need to analyze the health impacts that airborne particulates from construction dust will have on the local residents of the area. Valley Fever is a common issue that impacts desert communities when dust is stirred up.

Removal of stabilized soils and biological soil crust creates a destructive cycle of airborne particulates and erosion. As more stabilized soils are removed, blowing particulates from recently eroded areas act as abrasive catalysts that erode the remaining crusts thus resulting in more airborne particulates.

The DEIS should analyze the cumulative impacts on air quality that will result from the removal so much stabilized soil and biological soil crust.

Greenhouse Gases and Climate Change:

The DEIS should quantify the amount of GHG used for construction. How many pounds/tons of fossil fuel will be used? How much fossil fuel will vehicles use for construction, commuters to work, etc? Multiply these factors by a 30 year lifespan of the project.

Transmission line upgrades and new transmission facilities may increase the use of the green house gas called SF6 is used primarily in electricity transmission - and is emitted in especially large amounts in construction of new lines – and is 24,000 times as potent as CO2 in its global warming impacts. The Environmental Protection Agency has declared "that the electric power industry uses roughly 80% of all SF6 produced worldwide". Ideally, none of this gas would be emitted into the atmosphere. In reality significant leaks occur from aging equipment, and gas losses occur during equipment maintenance and servicing. With a global warming potential 23,900 times greater than CO2 and an atmospheric life of 3,200, one pound of SF6 has the same global warming impact of 11 tons of CO2. In 2002, U.S. SF6 emissions from the electric power industry were estimated to be 14.9 Tg CO2 Eq. ...

http://www.epa.gov/electricpower-sf6/basic.html

Please provide a more detailed analysis of the amount of SF6 gases that would be released by this project.

Will commuters be driving gas powered vehicles to and from work in a rural area for the next 30 years or however long the lifespan of the project is? How much green house gas is this? The Ivanpah Solar Electric Generating System is undergoing construction at this time. Approximately 250 vehicles commute to and from work every day from distances as far as Barstow, California.

Carbon Sequestration and removal of plants, caliche layers and biological soil crust would all be removed for this project. The DEIS should address the potential impacts of removal of these features. Will the new energy plant actually offset greenhouse gases?

Problems associated with hundreds of workers:

Construction of this project would bring hundreds of new people to the area. With these people may come law enforcement problems. These problems may include illegal off-roading, vandalism to private property, harassment of wildlife and other undesired behavior.

Hazardous Materials:

Cadmium-Telluride

The DEIS should outline the environmental consequences of a potential CdTe pollution event and how it could impact public health, water resources and flora and fauna.

When the fire studies were conducted, were the panels flat during the study so the glass wouldn't slide apart in a fire scenario? Another study should be conducted when panels are in a more diagonal position.

Under the current California Department of Toxic Substances Control regulations, the modules EnXco is considering using are considered hazardous waste when they reach the end of their life. It would not be accurate to claim they are risk free.

Please make available in the DEIS the breakage and failure rates from other CdTe power plants to get a better approximation of how often breakage occurs on site. First Solar had to recall almost 5% of their modules over some period in 2008 or 2009, so the breakage rate probably goes up when they all have to be taken down and tested.

If EnXco decides to sell the Desert Harvest Project, how would they be inspecting the panels for breakage? What are the criteria for determining that panels are broken?

The Norwegian Geotechnical Institute conducted recent tests on the leaching potential of CdTe from broken PV modules and PV placed in landfills. They conclude:

"The availability test on grounded CaTe PV module material shows a high leaching of both Cd and Te, thus the material exhibits a high maximum leaching release potential of these elements even at the solution's high PH level (P.H. 7.7)"

and

"All three conducted leaching tests show that when CdTe in the module was exposed to water, the thin film CdTe dissolves. The extent of the leaching is thus dependent on the "availability" of the CdTe film. Normally the CdTe is protected by glass layers in the PV module. Weathering and possible destruction of the modules during use or end disposal may lead to exposure of the CdTe film, and subsequent incrased leaching of CdTe into the environment."

A study from the Wuppertal Institute, Norway also concludes:

"The conclusion of this paper is that recent independent laboratory analyses conducted on CdTe PV modules confirm that these present a threat to the environment and health if disposed of in an improper and unprofessional way. These analyses also hint at possible, though less probable, cadmium leakages during the use phase in case of shattered protective glass exposing the CdTe film to natural precipitations. The only way to rule out the risks associated with the use of cadmium in PV is to refrain from using cadmium in the first place. This requires non-toxic substitutes to be readily available,
which they are (e.g. silicon-based photovoltaics). Cadmium should not spread in "green" solar technologies, but need to be disposed of safely." …Appraisal of laboratory analyses conducted

on CdTe photovoltaic modules-Mathieu Saurat, Michael Ritthoff; Wuppertal Institute, August 2010

The California Division of Toxic Substance Control is also proposing new rules that would say that a cracked or damaged PV panel is not necessarily end of its life. That would allow EnXco, or whoever will own the project, to leave several damaged panels out on the site. This could create a situation where a damaged panel or several can leach CdTe into the environment.

Invasive Weeds:

Even with the best management practices, the blading, scraping and additional development of new roads, transmission, etc. will create a very large opportunity for non-native plants to colonize the project site. Problems could arise with the following species:

Russian thistle (*Salsola tragus)*
Sahara Mustard *(Brassica tournifortii)*
Red brome (*Bromus rubens)*
Orchardgrass (*Dactylis glomerata)*

September 29, 2010 - At a California Energy Commission workshop for the Palen Solar Power Project located near Desert Center, California on September 27, CEC botanist Carolyn Chaney Davis told Solar Millennium, the project applicant, that there was a big concern over weeds taking over newly disturbed desert ground at both the Blythe Solar Power Project and at Palen. Chaney Davis had spent much time out in the field at the Blythe project site with preeminent tortoise biologist and desert ecologist Dr. Kristin Berry, who worried over the spread of the rampaging weed Sahara mustard (*Brassica tournefortii*).

The big concern at Blythe was the spread of weeds along the new "linears," the transmission lines needed to tie the giant solar thermal project to the grid. Berry was emphatic that Sahara mustard spread must be taken much more seriously. Transmission lines act as superhighways for its expansion into desert habitat.

Chaney Davis explained that revegetation after disturbance, such as when the power plant is decommissioned in 30 years, does not usually work in this arid region. So she stressed weed management from the start. Instead of imprinting or planting creosote, the desert should be restored by preserving the topsoil and seedbank. Disrupting biotic soil crusts allows weeds to gain a foothold and increase.

The companies need to manage outbreaks of weeds that happen after initial soil disturbance. A revegetation plan would also include mulching temporary roads after use so the off-roaders do not use them, further spreading weed seeds on tires. The Energy Commission was worried about spread of Sahara mustard into the tortoise Critical

Habitat in Chuckwalla Desert Wildlife Management Area. The weeds can grow so densely that the reptiles cannot move through them, and the mustards displace more palatable native wildflowers.

California Department of Fish and Game recommends a 10-year monitoring period to make sure revegetation is progressing. A 2 or 3 year period is not long enough, as only pioneer plants would be colonizing the disturbed ground. A trend towards climax vegetation would longer to see.

The herbicide, Roundup is commonly used to control weeds.

The following hazards are reported from the use of the herbicide, Roundup:

Problems with Roundup Weed Control

Subject: The 10 reasons, roundup. From: "John A. Keslick, Jr." treeman@pond.com Date: Tue, 29 Apr 2000 06:49:46

Compiled by Caroline Cox, Northwest Coalition for Alternatives to Pesticides- (NCAP)

Roundup, and related herbicides with glyphosate as an active ingredient, are advertised as products that can "eradicate weeds and unwanted grasses effectively with a high level of environmental safety." However, an independent, accurate evaluation of their health and environmental hazards can draw conclusions very different from those presented in the ads. Consider these facts:

1. Glyphosate can be persistent. In tests conducted by Monsanto, manufacturer of glyphosate-containing herbicides, up to 140 days were required for half of the applied glyphosate to break down or disappear from agricultural soils. At harvest, residues of glyphosate were found in lettuce, carrots, and barley planted one year after glyphosate treatment.

2. Glyphosate can drift. Test conducted by the University of California, Davis, found that glyphosate drifted up to 400 meters (1300 feet) durng ground applications and 800 meters 12600 feet) during aerial applications.

3. Glyphosate is acutely toxic to humans. Ingesting about 3/4 of a cup can be lethal. Symptoms include eye and skin irritation, lung congestion, and erosion of the intestinal tract. Between 1984 and 1990 in California, glyphosate was the third most frequently reported cause of illness related to agricultural pesticide use.

4. Glyphosate has shown a wide spectrum of chronic toxicity in laboratory tests. The National Toxicology Program found that chronic feeding of glyphosate caused salivary gland lesions, reduced sperm counts, and a lengthened estrous cycle (how often an individual comes into heat). Other chronic effects found in laboratory tests include an increase in the frequency of lethal mutations in fruit flies, an increase in frequency of pancreas and liver tumors in male rats along with an increase in the frequency of thyroid tumors in females, and cataracts. (ne fruit fly study used Roundup; the other studies used glyphosate.)

5. Roundup contains toxic trade secret ingredients. These include polyethoxylated tallowamines, causing nausea and diarrhea, and isopropylamine, causing chemical pneumonia, laryngitis, headache, and bums.

6. Roundup kills beneficial insects. Tests conducted by The International Organization for Biological Control showed that Roundup caused mortality of live beneficial species: a Thrichgramma, a predatory mite, a lacewing, a ladybug, and a predatory beetle.

7. Glyphosate is hazardous to earthworms, Tests using New Zealand's most common earthworm showed that glyphosate, in amounts as low as 1/20 of standard application rates, reduced its growth and slowed its development.

8. Roundup inhibits mycorrhizal fungi. Canadian studies have shown that as little as 1 part per million of Roundup can reduce the growth or colonization of mycorrhizal fungi.

9. Glyphosate reduces nitrogen fixation. Amounts as small as 2 parts per million have had significant effects, and effects have been measured up to 120 days after treatment. Nitrogen-fixing bacteria shown to be impacted by glyphosate include a species found on soybeans and several species found on clover.

10. Roundup can increase the spread or severity of plant diseases. Treatment with roundup increased the severity of Rhizoctonia root rot in barley, increased the amount and growth of take-all fungus, a wheat disease), and reduced the ability of bean plants to defend themselves against anthracnose.

These facts about Roundup are taken From a two-part article about the health and environmental hazards of glyphosate published in NCAP's Journal of Pesticide Reform. Copies of the article, with complete references for all of .the information presented, are available from NCAP for $2.00. NCAP, PO Box 1391; Eugene, OR 97440; (541) 344-5044.

Please evaluate the full impacts Roundup would have on the local natural and human environment.

Biological Resources:

Desert Tortoise *(Gopherus agassizii)*

The proposed project site will remove 1,200 acres of a connectivity corridor of desert tortoise habitat. The site represents a linkage between the Fish and Wildlife Service designated Colorado Recovery Unit and the West Mojave Recovery Unit. It also represents an important connectivity habitat between the Chuckwalla Desert Wildlife Management Area (DWMA)/Critical Habitat and the Joshua Tree Desert Wildlife Management Area/Critical Habitat. The revised recovery plan also makes the following statement concerning the importance of gene-flow in Recovery Units:

"(a) Genetic variation. *Gene flow is the result of dispersal accompanied by successful reproduction and incorporation of genes in a population. Ultimately, gene flow governs the amount of genetic connectivity among populations. A lack of gene flow will allow populations to differentiate over time by means of genetic drift and natural selection. Desert tortoises possess characteristics that potentially allow for high levels of gene flow among populations. For example, individuals have the ability to move long distances (Berry 1986; Edwards et al. 2004a). The capability for long-distance dispersal, combined with longevity and opportunities to reproduce annually throughout adulthood, indicates high potential for gene exchange outside of local areas. Free genetic exchange will be constrained, however, by the large distributional range of the tortoise given the relatively much smaller home range size and dispersal ability (isolationby-distance phenomenon; see Allendorf and Luikart 2007:209). Topographic features (e.g., mountain ranges) and other potential barriers (e.g., impassable habitat types, extreme climate conditions) can structure regional populations and lead to variable exchange of migrants among populations."* (pg 55)

Approval of this Right of Way could block a portion of this connectivity zone:

Niche modeling and implications of climate change on desert tortoises and other selected reptiles within Joshua Tree National Park , Cameron W. Barrows, University of California, Riverside, 28th September, 2009

Suitable desert tortoise habitat under current climate conditions was mapped in all but the highest elevation and or most rugged regions of Joshua Tree National Park .Under increasing summer temperatures and reduced annual precipitation scenarios, that suitable habitat initially increases However under more extreme climate shifts the models indicate that suitable habitat for tortoises would become reduced and more fragmented, with much of the central and southern portions of the Park no longer supporting suitable habitat. (pg 7)
Of the species analyzed, the threatened desert tortoise has been a focus of protection and conservation related research throughout the Mojave Desert (Doak et al. 1994, Chaffee and Berry 2006, Wallace and Thomas 2008). Desert tortoises occur in the Mojave and Sonoran Deserts; within the Sonoran Desert, the majority of their distribution is associated with regions typified by summer monsoon rain patterns; whereas the Mojave Desert's highly variable colder winter-dry summer climate may be a source of stress to the tortoises, and be a contributor to recent population declines (Curtin et al. 2009). Within Joshua Tree National Park, the Colorado Desert subdivision of the Sonoran Desert is drier and hotter still and so may constitute an even more marginal climate for tortoises. With this as a framework for current conditions, a climate shift toward a still more variable, hotter-drier condition would likely further stress the Park's tortoise population. An important component of that stress could be more frequent drought (Parmesan et al. 2000), reducing the availability of annual plants (Wallace and Thomas 2008), which are the tortoises' primary food (Jennings 2002). (pg 17)

While resilient to the evaluated least severe climate change increment, under more severe climate shifts the tortoise niche model indicated a reduction of 9-49% in suitable habitat within the Park. There was also increasing fragmentation; and assuming that a sustainable tortoise population would require at least 1000-5000 ha of contiguous suitable habitat, there could be a more biologically relevant reduction of 76-83% less in available habitat than the current condition.

Desert tortoises within this region rarely range below 500 m elevation. . In extremely arid deserts variation in annual precipitation is high; long periods of drought are often broken with rare pulses of wet conditions (Noy-Meir, 1973; Bell, 1979; MacMahon, 1979), so as the region gets drier drought frequency will likely increase. For annual plant-eating tortoises this would mean extended periods with no food available, and in part would explain the tortoises' absence from lower elevations. Chuckwallas more often forage on perennial trees and shrubs (Kwiatkowski and Sullivan 2002), plants with deeper root systems and so less impacted by short term variation in rainfall. (pg 17,18)

Barrows recommends maintaining these connectivity zones:

1. Maintaining connectivity to regions outside the Park, especially to the cooler wetter northwest, may provide genetic connections to larger populations outside the Park and so improve the sustainability of those populations inside the Park.

2. Taking a longer temporal view, these corridors could provide linkages for reestablishment of species once anthropogenic climate warming is abated.

3. Focus management efforts within the Park on maintenance of areas identified in this study as climate change refugia in order to provide the best potential habitat for those at-risk species. These manage efforts may include controlling exotic vegetation and fires (see E. Allen and colleagues).

5. Finally, the development of a monitoring program that will provide empirical data on how species and communities within the Park are responding to changes in habitats, including those catalyzed by climate, will be extremely valuable for reinforcing management actions. Such a monitoring program could be implemented through a citizen science outreach program (i.e. Sullivan et al. 2009, Howard and Davis 2009). These programs have the potential to provide quality data and relatively low costs, and to strengthen a public support cadre for the Park in the face of increasing challenges to the Park from surrounding development proposals. (pg. 18,19)

Due to the controversy associated with desert tortoise translocation, we would like to request that BLM consider an alternative away from the Proposed Alternative which is located adjacent to the Chuckwalla Critical Habitat for desert tortoise. The below numbers from the Fish and Wildlife Service indicate 50 percent mortality from translocation of desert tortoise.

-Tortoises handled for blood testing will have 5% mortality rate from handling.
- Tortoises translocated will have a 50% mortality rate.
- Resident Tortoises on the recipient site will also have a 50% mortality rate due to competition from translocated tortoises.

Golden Eagle Nest Surveys: EnXco should be required to conduct their own golden eagle nest surveys instead on relying on data from other projects as suggested in the Plan of Development. At this time, that data may be outdated from surveys conducted by Solar Millennium and First Solar.

The loss of foraging habitat is considered a “Take” under the Bald and Golden Eagle Protection Act.

There are six active golden eagle nests within 20 miles of the site. The closest active territory is located one and a half miles from the project boundary, and one Golden Eagle was observed flying south of I-10 in Chuckwalla Valley in the vicinity of the Red Bluff substation during surveys.

Polarized Glare:

The polarized reflection of sprawling PV facilities assumes the appearance of a large body of water. This can potentially be a death trap in the California Desert. Desert. Birds and insects can use up energy to get to water and end up dying of dehydration.

The Nature Conservancy has just released their Mojave Desert Ecoregional Assessment. In the assessment, they discuss the impacts of polarized light pollution on birds and insects:
"Light and noise pollution associated with electrical power plants can be problematic for wildlife. Polarized light pollution from PV panels can attract aquatic insects and other species that mistake the panels for bodies of water, potentially leading to population decline or even local extinction of some organisms (Horvath et al. 2010). Nighttime lighting for security or other reasons may negatively impact a variety of Mojave Desert species, many of which have developed nocturnal behavior to escape the daytime heat of the desert. *(Mojave Desert Ecoregional Assessment September 2010, The Nature Conservancy of California 201 Mission Street, 4th Floor San Francisco, CA 94105)* p. 50"

Bighorn Sheep *(Ovis canadensis nelsoni)* and **Burro Deer** *(Odocoileus hemionus eremicus).*

Bighorn sheep and burro deer are both BLM species of Special Concern.

Local land owners have told us through personal communication that bighorn sheep have visited agricultural lands near the project site.

Burro deer have also been seen on the site. The site represents an important connectivity zone for both of these species. Removal of 1,200 acres of this habitat will impair long term connectivity for both species.

Bighorn biologists Dr. John Wehausen and Dr. Vern Bleich have concluded that radio telemetry studies of bighorn sheep in various southwestern deserts, including the Mojave Desert of California, have found considerable movement of these sheep between mountain ranges.... Consequently, intermountain areas of the desert floor that bighorn traverse between mountain ranges can be as important to the long-term viability of populations as are the mountain ranges themselves.

Alluvial fans near steep rocky terrain can provide crucial foraging habitat for big horn sheep (Wehausen 2009)

For example, ewes at the end of gestation that need nutrients may come down from steep, rocky terrain looking for higher quality forage. They might use areas like the project site for only three weeks, but those three weeks are critical. The Chuckwalla Valley might also provide important movement corridors for deer and bighorn sheep. Wildlife corridors are present through and adjacent to the Desert Harvest Site .

"Radio telemetry studies of bighorn sheep in various southwestern deserts, including the Mojave Desert of California, have found considerable movement of these sheep between mountain ranges (Bleich et al., 1990b). This is especially true of males, but also of ewes (Bleich et al., 1996). Within individual mountain ranges, populations often are small (Table 1). Levels of inbreeding could be high in such populations, but intermountain movements provide a genetic connection with a larger metapopulation, and this will counteract potential inbreeding problems (Schwartz et al., 1986; Bleich et al., 1990b). Intermountain movements also are the source of colonization of vacant habitat, which is fundamental to metapopulation dynamics and persistence. .Colonization by ewes is the slow link in this process, but has recently been documented in two Mojave Desert ranges in California (Bleich et al., 1996; Torres et al., 1996). Consequently, intermountain areas of the desert floor that bighorn traverse between mountain ranges are as important to the long term viability of populations as are the mountain ranges themselves (Schwartz et al., 1986; Bleich et al., 1990b, 1996)."

The Society for the Conservation of Big Horn Sheep notes that a pre-construction baseline of big-horn sheep use should be established, followed by intensive monitoring during construction and follow-up post construction. They advocate a 1.5 mile buffer zone from the project border to the toe of the sloping mountain areas, to help connectivity of the local population and maintain the metapopulation dynamic at work with this sheep population. A wildlife corridor is absolutely essential for a healthy and viable population and for a healthy gene pool exchange, and that the buffer zone would establish a guideline or benchmark for any future development and additional loss of habitat.

Palm Springs round-tailed ground squirrel (*Spermophilus tereticaudus chlorus*)
The DEIS will need to outline a plan that provides avoidance and mitigation for this species.

Desert Leafcutting Ant (*Acromyrmex versicolor*)
The project area is the only know location for California's only Leafcutter ant species. A full analysis of the impacts to this species concerning habitat loss should be provided in the DEIS.

Plant Communities and Rare Plants:
Approval of this project would remove of 1,200 acres of Creosote Bush-White Bursage and Blue Palo Verde-Ironwood-Smoke Tree communities.

The cumulative impacts of this project and the Desert Sunlight project could negatively impact the following plants:

Foxtail cactus *Coryptantha alversonii*,
Emory's crucifixion thorn (*Castela emoryi*),
Las Animas colubrina (*Colubrina californica*),

California ditaxis (*Ditaxis serrata* var. *californica*),
Desert unicorn plant (*Proboscidea althaeifolia*),
Slender-spined allthorn (*Koeberlinia spinosa* ssp. *tenuispina*),

Biological Soil Crusts

Soil biological crust is a mix of organisms that occupy and protect the surface of the soil in most desert ecosystems. The organisms often include filamentous and non-filamentous cyanobacteria, mosses, lichens, liverworts and fungi.

The following publication should be reviewed by the BLM and the applicant's consulting biologists:

A Field Guide to Biological Soil Crusts of Western U.S. Drylands ;Common Lichens and Bryophytes. Roger Rosentreter, Matthew Bowker, Jayne Belnap

They say the following concerning biological soil crusts:

"Biological Soil Crusts are found on almost all soil types. Green algae are favored on more acidic and less salty soils, whereas cyanobacteria are favored on alkaline soils and soils with high salt content. Within a given climate zone, the cover of lichens and mosses generally increases with higher clay and silt content and lower sand content, as this also increases the stability and water-holding capacity of the soil. However, BSC cover and development is limited on clay soils with a high shrink-swell coefficient. Habitats within a site that are more moist (e.g., under plant canopies and thin plant litter or on north/northeast exposures) generally support a greater cover of lichens and mosses."

And:

"Ecological function:

The presence of these organisms on the soil surface increases soil stability. Because they are photosynthetic they also contribute carbon to the underlying soils. Free-living and lichenized cyanobacteria can also convert atmospheric nitrogen into bio-available nitrogen, and thus are an important source of this often limiting nutrient. All these organisms also secrete compounds that increase the bio-availability of phosphorus. Lichen morphological types with a more discontinuous cover (crustose, squamulose) allow water, gases, and seedlings to pass through to the soil surface, whereas mosses and lichens with a more continuous cover (foliose, fruticose) often block the flow of materials to the soil surface."

How will the loss of biological soil crust be mitigated?

Visual Resources:

The BLM should require KOP simulations that depict all of the visual impact scenarios. All of the most potentially visible angles of light and time of day should be considered to depict the worst case scenario.

KOP simulations should capture the "lake appearance" of reflective PV facilities. Too many simulations for solar projects only depict the panels as looking dark and solid black.

The following BLM required factors will need to be considered:

Angle of Observation. The apparent size of a project is directly related to the angle between the viewer's line-of-sight and the slope upon which the project is to take place. As this angle nears 90 degrees (vertical and horizontal), the maximum area is viewable.

Length of Time the Project Is In View. If the viewer has only a brief glimpse of the project, the contrast may not be of great concern. If, however, the project is subject to view for a long period, as from an overlook, the contrast may be very significant.

Relative Size or Scale. The contrast created by the project is directly related to its size and scale as compared to the surroundings in which it is place.

The 1,200 acre size of the project is large and will have the potential to cumulatively impact different VRM zones of different classes.. BLM defines the objective of this class *"to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention".*

We would like to request that the following Key Observation Point simulations be included in the DIES:

-Three KOP simulations from Joshua Tree National Park.

-One KOP simulation from the Chuckwalla Wilderness Area

-Two dark sky KOP's from different locations depicting security lighting.

-At least one KOP Simulation from private property.

-At least one KOP simulation depicting dust plumes from the construction of the project.

Impacts to Joshua Tree National Park:

The project would be built very close to the boundary Joshua Tree National Park. The industrial cumulative impacts of two major solar projects will change the character of the park forever and could impact future tourism potential.

The Joshua Tree National Park General Management Plan:

http://www.nps.gov/jotr/parkmgmt/gmp.htm makes the following conclusions about activities adjacent to the park that can have negative impacts:

"Developments and other land uses adjacent to the boundary threaten the integrity of the park's resources, views and wilderness values. Surrounding land use has changed significantly since creation of the monument. Subdivisions, utility corridors, mining, military facilities, and agricultural interests are, in some cases, right along the boundary. Eagle Mountain Landfill has been proposed near the southeast boundary. Concerns include impacts to the desert tortoise and other wildlife, trash blowing, leaks and air quality degradation. Development would intrude on the scene and diminish the naturalness and solitude of the wilderness. Other concerns include effects from air and water pollutants, invasion of non-native species from adjacent lands, and noisy overflights that effect wilderness solitude. The park's resources are also seriously threatened by illegal activities and uncontrolled access along the boundaries, such as off road vehicle use, theft of desert vegetation and archeological resources, wood cutting and dumping of hazardous and domestic wastes.

Fulfillment of the biosphere reserve concept and long-term protection of ecological units that extend outside the boundary are also made more difficult by land use and development around the park. The boundaries were revised in the early 1950's to accommodate mineral extraction. The configuration that had been designed by biologists to protect the natural systems of two deserts has been destroyed in many areas. Consequently, wildlife and vegetation systems were fragmented by uses such as hunting and mining and other developments."

Water: How much water (acre feet) will be used for construction and panel washing? What will the cumulative effects of aquifer drawdown be combined with the disturbance of the adjacent Desert Sunlight Project?

Will the altercation of stream channels cause localized flooding? Will stream channel altercation impact local groundwater recharge?

Cultural Resources:

Nearly all of the sites recorded in the area as prehistoric have been described as having potential for subsurface manifestation. In addition to their individual research potential properties, the distribution of many of these sites in conjunction with other prehistoric sites recorded between Desert Center and Blythe may provide links between vestiges of the Coco-Maricopa trail system as well as clues to activities associated with transportation along that route. As such, these sites could be considered as part of a complex archaeological district that would include evidence of trade, travel, interaction among the several cultural groups associated with the area (Cahuilla, Chemehuevi, Mojave, Serrano), resource exploitation along travel routes, seasonality of habitation, and trail spurs between the primary coastal-interior route and the springs and associated rock art sites in the bordering mountain ranges.

The BLM will need to consult with the Cahuilla, Chemehuevi, Mojave, and Serrano nations to address their concerns. Many of these people feel the entire region is a “cultural site” including the view-scape, the water and the biological resources.

Socio-Economics:

Most of these projects promise to save local economies. Construction jobs are usually awarded to Union workers from large cities rather than local people. The average PV facility of this size will only create 5 to ten full time jobs. This will not save the economy. It will not make the community of Desert Center appealing for future residential purposes. It really is a short-term boom and bust fix to a complex economical problem. PV in the built environment would create a much longer, more sustainable need for installation and maintenance. Placing big solar plants on public lands is the wrong way to use solar energy. Ten percent of the power will be lost in transmission alone.

How would this impact property values and future real estate potential of the local community?

Conclusion:

Large solar energy boondoggles prioritized by the BLM will not survive on their own without federal subsidies. The only way these will pay for themselves will be through rate hikes of utility customers. These are all planned with short term benefits in mind. Construction will take place during the 2012 elections, but there is little economic future in the project after that. The BLM has become a mouthpiece agency for short term benefit energy companies. We are aware that these mandates come from the Interior Department, but the BLM needs to show responsibility and common sense. Approval of this project will cause long term environmental impacts and short term economic benefits. It is a lose/lose situation all around. Please support an alternative that determines No Action and designates conservation status to the proposed Right of Way.

Thank you,

Kevin Emmerich

Laura Cunningham

Basin and Range Watch

P.O. Box 70

Beatty, NV 89004

Audubon California
California Native Plant Society * California Wilderness Coalition
Center for Biological Diversity * Defenders of Wildlife
Desert Protective Council * Mojave Desert Land Trust
National Parks Conservation Association
Natural Resources Defense Council * Sierra Club * The Nature Conservancy
The Wilderness Society * The Wildlands Conservancy

Renewable Siting Criteria for California Desert Conservation Area

Environmental stakeholders have been asked by land management agencies, elected officials, other decision-makers, and renewable energy proponents to provide criteria for use in identifying potential renewable energy sites in the California Desert Conservation Area (CDCA). Large parts of the California desert ecosystem have survived despite pressures from mining, grazing, ORV, real estate development and military uses over the last century. Now, utility scale renewable energy development presents the challenge of new land consumptive activities on a potentially unprecedented scale. Without careful planning, the surviving desert ecosystems may be further fragmented, degraded and lost.

The criteria below primarily address the siting of solar energy projects and would need to be further refined to address factors that are specific to the siting of wind and geothermal facilities. While the criteria listed below are not ranked, they are intended to inform planning processes and were designed to provide ecosystem level protection to the CDCA (including public, private and military lands) by giving preference to disturbed lands, steering development away from lands with high environmental values, and avoiding the deserts' undeveloped cores. They were developed with input from field scientists, land managers, and conservation professionals and fall into two categories: 1) areas to prioritize for siting and 2) high conflict areas. The criteria are intended to guide solar development to areas with comparatively low potential for conflict and controversy in an effort to help California meet its ambitious renewable energy goals in a timely manner.

Areas to Prioritize for Siting

- Lands that have been mechanically disturbed, i.e., locations that are degraded and disturbed by mechanical disturbance:
  - Lands that have been "type-converted" from native vegetation through plowing, bulldozing or other mechanical impact often in support of agriculture or other land cover change activities (mining, clearance for development, heavy off-road vehicle use).[1]
- Public lands of comparatively low resource value located adjacent to degraded and impacted private lands on the fringes of the CDCA:[2]
  - Allow for the expansion of renewable energy development onto private lands.
  - Private lands development offers tax benefits to local government.
- Brownfields:
  - Revitalize idle or underutilized industrialized sites.
  - Existing transmission capacity and infrastructure are typically in place.

- Locations adjacent to urbanized areas:[3]
    - Provide jobs for local residents often in underserved communities;
    - Minimize growth-inducing impacts;
    - Provide homes and services for the workforce that will be required at new energy facilities;
    - Minimize workforce commute and associated greenhouse gas emissions.
- Locations that minimize the need to build new roads.
- Locations that could be served by existing substations.
- Areas proximate to sources of municipal wastewater for use in cleaning.
- Locations proximate to load centers.
- Locations adjacent to federally designated corridors with existing major transmission lines.[4]

High Conflict Areas

In an effort to flag areas that will generate significant controversy the environmental community has developed the following list of criteria for areas to avoid in siting renewable projects. These criteria are fairly broad. They are intended to minimize resource conflicts and thereby help California meet its ambitious renewable goals. The criteria are not intended to serve as a substitute for project specific review. They do not include the categories of lands within the California desert that are off limits to all development by statute or policy.[5]

- Locations that support sensitive biological resources, including: federally designated and proposed critical habitat; significant[6] populations of federal or state threatened and endangered species,[7] significant populations of sensitive, rare and special status species,[8] and rare or unique plant communities.[9]
- Areas of Critical Environmental Concern, Wildlife Habitat Management Areas, proposed HCP and NCCP Conservation Reserves.[10]
- Lands purchased for conservation including those conveyed to the BLM.[11]
- Landscape-level biological linkage areas required for the continued functioning of biological and ecological processes.[12]
- Proposed Wilderness Areas, proposed National Monuments, and Citizens' Wilderness Inventory Areas.[13]
- Wetlands and riparian areas, including the upland habitat and groundwater resources required to protect the integrity of seeps, springs, streams or wetlands.[14]
- National Historic Register eligible sites and other known cultural resources.
- Locations directly adjacent to National or State Park units.[15]

EXPLANATIONS

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[1] Some of these lands may be currently abandoned from those prior activities, allowing some natural vegetation to be sparsely re-established. However, because the desert is slow to heal, these lands do not support the high level of ecological functioning that undisturbed natural lands do.

[2] Based on currently available data.

[3] Urbanized areas include desert communities that welcome local industrial development but do not include communities that are dependent on tourism for their economic survival.

[4] The term "federally designated corridors" does not include contingent corridors.

[5] Lands where development is prohibited by statute or policy include but are not limited to:

National Park Service units; designated Wilderness Areas; Wilderness Study Areas; BLM National Conservation Areas; National Recreation Areas; National Monuments; private preserves and reserves; Inventoried Roadless Areas on USFS lands; National Historic and National Scenic Trails; National Wild, Scenic and Recreational Rivers; HCP and NCCP lands precluded from development; conservation mitigation banks under conservation easements approved by the state Department of Fish and Game, U.S. Fish and Wildlife Service or Army Corps of Engineers a; California State Wetlands; California State Parks; Department of Fish and Game Wildlife Areas and Ecological Reserves; National Historic Register sites.

[6] Determining "significance" requires consideration of factors that include population size and characteristics, linkage, and feasibility of mitigation.

[7] Some listed species have no designated critical habitat or occupy habitat outside of designated critical habitat. Locations with significant occurrences of federal or state threatened and endangered species should be avoided even if these locations are outside of designated critical habitat or conservation areas in order to minimize take and provide connectivity between critical habitat units.

[8] Significant populations/occurrences of sensitive, rare and special status species including CNPS list 1B and list 2 plants, and federal or state agency species of concern.

[9] Rare plant communities/assemblages include those defined by the California Native Plant Society's Rare Plant Communities Initiative and by federal, state and county agencies.

[10] ACECs include Desert Tortoise Desert Wildlife Management Areas (DWMAs). The CDCA Plan has designated specific Wildlife Habitat Management Areas (HMAs) to conserve habitat for species such as the Mohave ground squirrel and bighorn sheep. Some of these designated areas are subject to development caps which apply to renewable energy projects (as well as other activities).

[11] These lands include compensation lands purchased for mitigation by other parties and transferred to the BLM and compensation lands purchased directly by the BLM.

[12] Landscape-level linkages provide connectivity between species populations, wildlife movement corridors, ecological process corridors (e.g., sand movement corridors), and climate change adaptation corridors. They also provide connections between protected ecological reserves such as National Park units and Wilderness Areas. The long-term viability of existing populations within such reserves may be dependent upon habitat, populations or processes that extend outside of their boundaries. While it is possible to describe current wildlife movement corridors, the problem of forecasting the future locations of such corridors is confounded by the lack of certainty inherent in global climate change. Hence the need to maintain broad, landscape-level connections. To maintain ecological functions and natural history values inherent in parks, wilderness and other biological reserves, trans-boundary ecological processes must be identified and protected. Specific and cumulative impacts that may threaten vital corridors and trans-boundary processes should be avoided.

[13] Proposed Wilderness Areas: lands proposed by a member of Congress to be set aside to preserve wilderness values. The proposal must be: 1) introduced as legislation, or 2) announced by a member of Congress with publicly available maps. Proposed National Monuments: areas proposed by the President or a member of Congress to protect objects of historic or scientific interest. The proposal must be: 1) introduced as legislation or 2) announced by a member of Congress with publicly available maps. Citizens' Wilderness Inventory Areas: lands that have been inventoried by citizens groups, conservationists, and agencies and found to have defined "wilderness characteristics." The proposal has been publicly announced.

[14] The extent of upland habitat that needs to be protected is sensitive to site-specific resources. For example: the NECO Amendment to the CDCA Plan protects streams within a 5-mile radius of Townsend big-eared bat maternity roosts; aquatic and riparian species may be highly sensitive to changes in groundwater levels.

[15] Adjacent: lying contiguous, adjoining or within 2 miles of park or state boundaries. (Note: lands more than 2 miles from a park boundary should be evaluated for importance from a landscape-level linkage perspective, as further defined in footnote 12).

Defenders of Wildlife
Natural Resources Defense Council
Sierra Club

October 17, 2011

Lynnette Elser
Planning and Environmental Coordinator
California Desert District Office
Bureau of Land Management
22835 Calle San Juan de Los Lagos
Moreno Valley, California 92553

(via email to: CAdesertharvest@blm.gov; lelser@blm.gov)

Re: **Notice of Intent to Prepare an Environmental Impact Statement for the Proposed enXco Desert Harvest Solar Farm Project, Riverside County, CA and Possible Land Use Plan Amendment**

Dear Ms. Elser:

Thank you for the opportunity to provide scoping comments to help guide the preparation of a Draft Environmental Impact Statement ("DEIS") and Proposed Amendment to the California Desert Conservation Area ("CDCA") Plan for the proposed Desert Harvest Solar Farm Project. These comments are submitted on behalf of Defenders of Wildlife ("Defenders"), the Natural Resources Defense Council ("NRDC") and the Sierra Club, all non-profit public interest conservation organizations with offices in California as well as elsewhere in this country.

Defenders has 1.1 million members and supporters nationally, including 67,000 in California. Defenders is dedicated to protecting all wild animals and plants in their natural communities. To this end, we employ science, public education and participation, media, legislative advocacy, litigation, and proactive on-the-ground solutions in order to impede the accelerating rate of extinction of species, associated loss of biological diversity, and habitat alteration and destruction.

NRDC has over 1.2 million members and online activists nationwide, more than 250,000 of whom live in California. NRDC uses law, science and the support of its members and activists to protect the planet's wildlife and wild places and to ensure a safe and healthy environment for all living things. NRDC has worked to protect wildlands and natural values on public lands and to promote pursuit of all cost effective energy efficiency measures and sustainable energy development for many years.

The Sierra Club is a national nonprofit organization of approximately 1.3 million members and supporters (approximately 250,000 of whom live in California) dedicated to exploring, enjoying, and protecting the wild places of the earth; to practicing and promoting the responsible use of the earth's ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. The Sierra Club's concerns encompass protecting our public lands, wildlife, air and water while at the same time rapidly increasing our use of renewable energy to reduce global warming.

As we transition toward a clean energy future, it is imperative for our future and the future of our wild places and wildlife that we strike a balance between addressing the near term impacts of large scale solar energy development with the long-term impacts of climate change on our biological diversity, fish and wildlife habitat and natural landscapes. To ensure that the proper balance is achieved, we need smart planning for renewable power that avoids and minimizes adverse impacts on wildlife and wild lands. These projects should be placed in the least harmful locations near existing transmission lines and on already disturbed lands.

We strongly support the emission reduction goals found in the Global Warming Solutions Act of 2006, AB 32, including the development of renewable energy in California. However, we urge that in seeking to meet our renewable energy portfolio standard in California, project proponents design their projects in the most sustainable manner possible. This is essential to ensure that project approval moves forward expeditiously and in a manner that does not sacrifice our fragile desert landscape and wildlife in the rush to meet our renewable energy goals.

Brief description of the proposed project and Federal action

EnXco applied to the BLM for a right of way to develop, operate and decommission a 150 MW photovoltaic solar power plant on approximately 1,280 acres of public land located six miles north of the town of Desert Center in the Chuckwalla Valley. Proposed project facilities include a substation, administration building, operations and maintenance facilities, transmission line, and temporary construction lay down areas. A 230-kilovolt (kV) generation interconnection transmission line would either be via the recently authorized First Solar Desert Sunlight 230-kV gen-tie (as a shared facility), or would be a separate line located on private and BLM-administered lands and would utilize a planned 230- to 500-kV substation (referred to as the Red Bluff Substation). The Red Bluff Substation would connect the project to the Southern California Edison regional transmission grid.

Since the proposed Desert Harvest Project site was not previously identified as suitable for electrical power generation in the CDCA Plan, BLM proposes to amend the CDCA Plan to allow for such use while concurrently considering whether or not to grant a right of way for the proposed project.

Status of enXco's right of way application

According to the BLM LR 2000 case file for this proposed project, enXco submitted a right of way application for the proposed project on 11/13/2007. On 6/16/2010 there was a pre-application meeting between BLM and enXco, an interagency meeting on the project application was held on 4/21/2011, and BLM has authorized the applicant's consultants to proceed with cultural resources and other site-surveys. The BLM received a request from the National Park Service at Joshua Tree National Park for Cooperating Agency status in the NEPA process for the proposed project on 6/27/2011. BLM approved the applicant's environmental consultant, Aspen Environmental Group, on 3/30/2011.

Our specific comments are as follows:

1. Introduction. Our organizations recognize the need to develop our nation's renewable energy resources and to do so rapidly in order to respond effectively to the challenge of climate change. Unique natural resources here in California are already being affected by climate change, including, for example, Pikas in the High Sierra Nevada and Joshua Trees in the Mojave Desert.

We also recognize that renewable energy development can help create jobs in communities that are eager for them, because of the current economic situation. For these and other related reasons, our organizations are working with regulators and project proponents to move properly sited renewable energy projects forward. That said, renewable energy development is not appropriate everywhere on the public lands and must be balanced against the equally urgent need to protect unique and sensitive resources of the CDCA. California is fortunate in having sufficient renewable resources, and especially solar energy, in many areas of the State, which provide opportunities for development of renewable energy generation and transmission in an environmentally and economically sound manner.

We strongly support renewable energy production and utilization, but we do not consider the construction of large-scale projects, and especially the very large solar energy projects proposed on relatively undisturbed public lands in the CDCA, to be the only way, or even the best way, to achieve our renewable energy goals. We strongly advocate that such large scale solar projects should be located on degraded or disturbed land such as abandoned agricultural fields, industrial sites, and near existing structures rather than on public lands containing intact natural biological communities, particularly those that include threatened, endangered or other at-risk species.

As we and our colleagues at sister organizations have repeatedly stated, the best way to develop the renewable resources of the CDCA is through comprehensive, pro-active planning involving federal, state and local governments to identify the most appropriate areas for such development -- *i.e.*, development zones -- and to guide development to those zones. *See, e.g.,* letter dated June 29, 2009 to Interior Secretary Salazar and California's Governor Schwarzenegger and signed by 11 organizations, including our own, attached to this letter.

Despite our fundamental belief in the critical importance of agency-guided siting of renewable energy development, rather than developer-initiated siting, we invested a great deal of time and effort into the "fast-track" projects last year, and will engage on individual projects, such as this one, in 2011.

2. BLM's process in authorizing proposed project is flawed. Unfortunately, BLM continues to rely on developer-initiated siting rather than agency-guided siting for development of renewable energy projects, as noted above. The Federal Register Notice for the proposed project states "Pursuant to the BLM's CDCA Plan, sites associated with power generation or transmission not identified in the CDCA Plan will be considered through the plan amendment process to determine the suitability of the site for renewable energy development. Since the proposed project site was not previously identified as suitable, authorization would require amendment of the CDCA Plan."

Significant time and effort on the part of both the BLM and the project applicant has already been invested in this right of way application. BLM has had enXco's right of way application for nearly four years and began actively processing it this year. The considerable time and expense on the part of enXco that has already been invested in this proposed project is documented in the LR 2000 case file log, and includes submission of a plan of development, cost recovery funds and hiring consultants to conduct the necessary site inventories and analyses in support of the NEPA process.

One important lesson that our organizations learned in the course of dealing with the "fast-track" projects in 2009-2010 is that the more time and money invested in an application by the BLM and the project proponent, the harder it is to make changes to a proposed project, even when those changes would significantly reduce natural and cultural resource conflicts. This lesson is a major reason why our groups pressed BLM and the Interior Department to adopt criteria for use in identifying which projects should be moved forward in the pending application queue. It was approximately six months ago that BLM adopted such criteria, *see* Instruction Memorandum No. 2011-061, "To: All Field Offices, From: Director, Subject: Solar and Wind Energy Applications – Pre-Application and Screening," dated February 7, 2011, and the BLM should be using those criteria in selecting which project applications will be processed and analyzed, i.e., to identify the projects which would be located in areas with the fewest environmental concerns, thus increasing the likelihood they can ultimately be approved in a timely manner and with the least amount of controversy. We urge BLM to carefully apply the screening criteria to this proposed project to make sure any issues are effectively addressed in the DEIS.

3. National Environmental Policy Act (NEPA). Based on our recent experience in analyzing and commenting on many NEPA documents for fast-track renewable energy projects in the California Desert and Nevada, which were published by the BLM, we strongly recommend that BLM pay particular attention to developing accurate and factual sections of the NEPA document for the

proposed project for 1) purpose and need, 2) alternatives to the proposed action and 3) cumulative impacts.

A. Purpose and need. The purpose and need statement should not simply indicate that BLM is responding to an applicant's right of way application, as it has done for previous renewable energy projects. The framing of the purpose and need should be broad enough to support alternatives that are meaningful.

B. Alternatives to the proposed action. Alternatives are extremely important considering that public land-based renewable energy projects in the CDCA, individually and cumulatively, have resulted in the allocation of tens of thousands of acres of ecologically intact public lands to single-use, utility scale energy projects in just the past year. The range of alternatives must be carefully and methodically developed as a means to primarily avoid, and secondarily to minimize, adverse impacts to natural and cultural resources on our public lands, and especially in the CDCA because of statutory management requirements contained in the Federal Land Policy and Management Act. Alternatives to the proposed project, including alternative locations and reduced project sizes, need to be fully considered and analyzed. Furthermore, alternative locations must not be limited to public lands; previously disturbed private lands may provide opportunities for project development that do not entail significant adverse impacts to natural biological communities and sensitive biological resources that are often found on public lands. Consideration and analysis of alternative project locations is critical to ensuring that sites ultimately approved for the proposed project is in the best possible location, and one that avoids destruction of natural biological communities.

NEPA requires that BLM consider a range of alternatives, which is "the heart of the environmental impact statement." 40 C.F.R. § 1502.14. NEPA requires BLM to "rigorously explore and objectively evaluate" a range of alternatives to proposed federal actions. See id. §§ 1502.14(a) and 1508.25(c). "An agency must look at every reasonable alternative, with the range dictated by the nature and scope of the proposed action."[1] An agency violates NEPA by failing to "rigorously explore and objectively evaluate all reasonable alternatives" to the proposed action.[2] This evaluation extends to considering more environmentally protective alternatives and mitigation measures.[3] NEPA requires that an actual "range" of alternatives is considered, so that they will "preclude agencies from defining the objectives of their actions in terms so unreasonably narrow that they can be accomplished by only one alternative (i.e. the applicant's proposed project)."[4] This requirement prevents the EIS from becoming "a foreordained formality."[5] A range of alternatives to the proposed project must also be evaluated under Section 15126.6 of CEQA.

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[1] Northwest Envtl. Defense Center v. Bonneville Power Admin., 117 F.3d 1520, 1538 (9th Cir. 1997).

[2] City of Tenakee Springs v. Clough, 915 F.2d 1308, 1310 (9th Cir. 1990) (quoting 40 C.F.R. § 1502.14).

[3] *See, e.g.,* Kootenai Tribe of Idaho v. Veneman, 313 F.3d 1094,1122-1123 (9th Cir. 2002) (and cases cited therein).

[4] Colorado Environmental Coalition v. Dombeck, 185 F.3d 1162, 1174 (10th Cir. 1999), citing Simmons v.

Many project applicants have signed Power Purchase Agreements with public utility companies for a certain amount of electrical power prior to siting decisions being made. This practice appears to have made some applicants unwilling to consider alternatives to their projects, including possible re-configurations of project footprints and associated changes in energy production. This perceived lack of flexibility cannot be allowed to preclude the BLM's consideration of a reasonable range of alternatives. The BLM must consider more alternatives than merely the project as proposed or no project. More specifically, the BLM should consider and analyze alternatives designed to avoid or significantly minimize identified resource conflicts and concerns, including alternative locations involving degraded private or federal lands having minimal biological resource values.

Since BLM intends to determine whether or not to amend the CDCA Plan to allow for the proposed project, we strongly recommend that the alternatives include provisions for conserving at-risk species, such as the Desert tortoise, which would allow BLM to address, in part, its obligation under Section 7(a)(1) of the Endangered Species Act. Such alternatives should include conservation actions recommended by the FWS in recent biological opinions for large-scale solar projects in this planning area. In the biological opinions for the Blythe, Palen, Desert Sunlight and Genesis solar projects, the FWS consistently included the following recommendation, "At a minimum, we recommend that BLM amend the California Desert Conservation Area Plan to prohibit additional renewable energy development …within the upper bajadas (mapped as "dissected fans" on the NECO Map 3-4, Landforms) in the mountains of northeastern Riverside County." BLM should determine whether or not the proposed project conforms to these conservation recommendations and, if not, develop an alternative to the proposed project that does not involve development in the dissected fan areas.

C. Cumulative impacts. Cumulative impacts of the proposed project, and other existing and reasonably foreseeable land uses, on at-risk species and their habitats on a regional scale need to be carefully analyzed. Cumulative impacts need to be analyzed and considered in the context of various laws and regulations pertaining to management of public lands in the CDCA, including the Endangered Species Act, Federal Land Policy and Management Act, and BLM Manuals 6840 (Special Status Species Management), 6500 (Wildlife Habitat

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United States Army Corps of Engineers, 120 F.3d 664, 669 (7th Cir. 1997).

[5] City of New York v. Department of Transp., 715 F.2d 732, 743 (2nd Cir. 1983). *See also*, Davis v. Mineta, 302 F.3d 1104 (10th Cir. 2002).

Management) and 4180 (Public Land Health). Lastly, the effects of the proposed project on management policies contained in the CDCA Plan must be carefully identified and analyzed.

Regarding cumulative impacts, we strongly urge BLM to consider the ecological condition and trend of lands and biological resources within the western Chuckwalla Valley where the proposed project is located. It is essential such an analysis consider the adverse impacts from the recently approved 4,000 acre Desert Sunlight solar project, located immediately north of the proposed project, as well as the potential impacts from other pending applications in this region on both private and public lands. In a real sense, BLM needs to establish the carrying capacity for renewable energy in this area given all the pending applications.

Because the project is in an area being evaluated as a potential zone in the PEIS, the project must be considered in that context. NEPA's implementing regulations explain that agencies should consider connected, cumulative, and similar actions in the same impacts statement. "Connected actions" must "be considered together in a single EIS."[6] Likewise, cumulative actions "which when viewed with other proposed actions have cumulatively significant impacts should be discussed in the same impact statement." 40 C.F.R. § 1508.25(a)(2). Similar, reasonably foreseeable actions also should be considered together in the same environmental review document when the actions "have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography," and the "best way to assess adequately [their] combined impacts […] or reasonable alternatives" is to consider them together. 40 C.F.R. § 1508.25(a)(3).

4. Biological resources of special concern.

   A. Dry Desert Wash Woodlands. The proposed project is located in a portion of the Chuckwalla Valley that contains Dry Desert Wash Woodland, which is noted for its ecological significance in BLM's Northern and Eastern Colorado Desert Plan (NECO Plan). *See* NECO Plan, Map 3-3, Plant Communities. It appears that the proposed project falls within an area containing this plant community as shown on Map 3-3. The NECO Plan contains conservation provisions for Dry Desert Wash Woodlands and other rare habitats:

   > "*The requirements for compensation at 3:1 replacement acres would discourage project placement in Desert Dry Wash Woodland and Desert Chenopod Scrub communities. Both of these are present in small amounts, but add greatly to overall plant diversity in the planning area. Similar compensation rates for disturbance of closed dunes and playas communities would likewise discourage projects on these very rare communities.*" (NECO Plan, Chapter 4, p. 83)

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[6] Thomas v. Peterson, 753 F.2d 754, 758 (9th Cir. 1985).

Clearly, the NECO Plan anticipated that projects that would entail destruction of Dry Desert Wash Woodlands would be discouraged due to the 3:1 habitat loss compensation requirement, but such was not the case with the proposed project. Avoidance of sensitive Desert Dry Wash Woodland habitat is critical to its long term conservation on public lands in this planning area. Due to the large size of the proposed project and its apparent overlap with Dry Desert Wash Woodland Habitat, it is essential that alternatives to the proposed project that completely avoid this habitat type are identified and analyzed in the NEPA process.

B. Landforms: Dissected Fans. Dissected fans or upper bajadas adjacent to the McCoy Mountains contains the higher quality tortoise habitat in the region, and, as noted above, the FWS recommended that BLM prohibit further renewable energy development in this area, as well as in dissected fan habitats adjacent to the mountains in eastern Riverside County in general. The NEPA analysis should identify to what extent the proposed project would affect lands within this landform, and identify alternatives or impact avoidance measures necessary to avoid habitat loss in these areas.

C. Foraging habitat for Golden eagles and other raptors. Based on the results of a 2010 golden eagle survey for several solar energy projects in eastern Riverside County, conducted by the Wildlife Research Institute[7], evidence of current or past nesting by Golden eagle was noted in the region including the Coxcomb and Chuckwalla Mountains. Although the proposed project does not provide suitable raptor nesting habitat, the proposed project area is within the potential foraging range of this species. We recommend that an analysis of the effects of the proposed project, as well as other existing and proposed projects, on raptor foraging habitat within the area is included in the NEPA analysis.

D. Desert tortoise and habitat connectivity. Our recent involvement with analyzing and commenting on Desert tortoise issues associated with the adjacent Desert Sunlight solar project indicate to us that these issues also need to be carefully analyzed for the proposed project. Of special concern is the potential impact of the proposed project on Desert tortoise connectivity habitat that extends through portions of Chuckwalla Valley including the Pinto Wash and more northerly suitable habitats. The NEPA analysis for the proposed project should address impacts, avoidance measures and other mitigation relative to the Desert tortoise and suitable connectivity habitats.

E. Wildlife Habitat Management Area (WHMA). A portion of the proposed project occurs within the BLM-designated Palen-Ford WHMA, established as part of the regional conservation framework for public lands containing numerous species of sensitive plants and animals. The Desert Sunlight solar project also overlapped this WHMA but to a much greater extent. We recommend careful analysis of the effects of the proposed project on this WHMA as well as cumulative impacts due to the numerous solar energy projects throughout the Chuckwalla Valley that are under consideration or have been approved. We recommend BLM develop alternatives to the proposed project to address this issue, and specifically one that avoids project siting within this WHMA.

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[7] http://energy.ca.gov/sitingcases/genesis_solar/documents/applicant/2010-06-24_Golden_Eagle_Surveys_Surrounding_4_Proposed_Solar_Developments_TN-57324.PDF

This concludes the scoping comments of our organizations. Please contact us individually or as a group if you have questions or need clarification about any of the issues or recommendations we have included in this letter. Thank you for considering these scoping comments from our organizations.

Sincerely,

Jeff Aardahl

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Defenders of Wildlife
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Gualala, CA 95445

Helen O'Shea
Natural Resources Defense Council
111 Sutter Street, 20th Floor
San Francisco, CA 94104

Barbara Boyle

Barbara Boyle
Senior Representative, Clean Energy Solutions
Sierra Club
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Sacramento, CA 95814

Attachment: Recommended siting criteria for solar energy projects

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October 7, 2011

VIA U.S. MAIL AND FACSIMILE

Lynnette Elser
Planning and Environmental Coordinator
Bureau of Land Management
California Desert District Office
22835 Calle San Juan de Los Lagos
Moreno Valley, CA 92553
Fax: (951) 697-5299

RECEIVED
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Re: Request for Mailed Notice of NEPA Actions and Public Hearings –enXco Desert Harvest Solar Farm Project, Riverside County, and Possible Land Use Plan Amendment (CACA 49491)

Dear Ms. Elser:

We are writing on behalf of the California Unions for Reliable Energy to request mailed notice of any and all hearings, public meetings, environmental review documents, and other actions related to enXco's Desert Harvest Solar Farm Project and possible land use plan amendment (CACA 49491) ("Project") in Riverside County, as well as a copy of the environmental review document when it is made available for public review. This request is made pursuant to the National Environmental Policy Act ("NEPA") (40 C.F.R., §§ 1506.6(b)(1), 1501.4(e)(1) and 1501.7(a)(1)) and all other applicable laws and regulations.

Please send the above requested items to our South San Francisco office as follows:

Via U.S. Mail

Janet Laurain
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080

Via Email

jlaurain@adamsbroadwell.com

Please call me at (650) 589-1660 if you have any questions. Thank you for your assistance with this matter.

Sincerely,

Janet Laurain

Janet Laurain
Environmental Paralegal

JML:cnh

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Lynnette Elser
Planning and Environmental Coordinator
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22835 Calle San Juan de Los Lagos
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October 17, 2011

Dear Ms. Elser,

Eagle Crest Energy Company (ECE) appreciates the opportunity to submit comments on the Bureau of Land Management (BLM) Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Desert Harvest Solar Farm Project. We are concerned about potential land use conflicts between the proposed Desert Harvest project and the proposed Eagle Mountain Pumped Storage Project.

ECE holds a Preliminary Permit issued by the Federal Energy Regulatory Commission (FERC or Commission) most recently on August 13, 2008 to pursue development of the Eagle Mountain Project on public and private lands to the west of the Desert Harvest Project, with linear features extending through the Desert Harvest project area[1] At the time of ECE's filing of the Preliminary Permit Application, ECE envisioned an interconnection transmission line traversing the Chuckwalla Valley from the Central Project Area to the southeast, parallel to the existing Southern California Edison transmission line. This interconnection transmission line was planned to connect to a proposed Colorado River substation near Blythe, California. The lands within the proposed project boundary, as displayed in the Preliminary Permit Application, are subject to a federal power reservation, as specified in Section 24 of the Federal Power Act.[2]

In June 2009, ECE applied to the FERC for a license to construct and operate the 1,300 MW Eagle Mountain Pumped Storage Project. In addition, ECE filed an application for a right-of-way (SF-299) for the Eagle Mountain Pumped Storage Project with the BLM in October 2008. In July 2009, BLM requested that ECE amend the SF-299 to reflect the project description in the FERC license application (letter attached). ECE responded to BLM's request in August 2009, with an amended SF-299 right-of-way application.

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[1] *Eagle Crest Energy Company*, 124 FERC ¶ 62,126 (2008).

[2] *See* 16 U.S.C. § 818

In December 2010, FERC published a Draft Environmental Impact Statement (DEIS) for the proposed Eagle Mountain Project.[3] The DEIS identified a FERC Staff Recommended Alternative with a transmission route parallel to the SCE line interconnecting to the Red Bluff Substation as the environmentally preferred alternative.

ECE anticipates that, should FERC decide to issue a license for the project, the FERC Staff Recommended Alternative will become the licensed transmission route. In that event, the Eagle Mountain interconnection transmission route will cross through the southwestern parcel identified on the maps for the Desert Harvest project as being for the "transmission line." The lands included in the FERC Staff Recommended Alternative were included within the proposed project boundary in ECE's March 3, 2008 preliminary permit application, which thereby subjects those lands to a power project reservation under Section 24 of the Federal Power Act.[4]

The operation of Section 24 of the Federal Power Act precludes BLM from disposing of those lands designated for the Desert Harvest project transmission line that were withdrawn from disposal and reserved for power site use by the filing of ECE's preliminary permit application encompassing those lands. Specifically, Section 24 of the FPA provides:

Any lands of the United States included in any proposed project under the provisions of this Part shall from the date of the filing of application therefor be reserved from entry, location or other disposal under the laws of the United States until otherwise directed by the [FERC] or by Congress." *See* 16 U.S.C. § 818.

It should be noted that in an earlier preliminary permit proceeding for the Eagle Mountain Project, the Commission addressed this power site reservation issue in the case involving land exchanged under Section 206 of the Federal Land Management Policy Act (FLPMA). In that decision, the Commission clarified that the segregation of lands by BLM does not affect the operation of Section 24 of the FPA to withdraw lands with a federal power site reservation. *See Eagle Mountain Energy Company*, 61 FERC ¶ 61, 066 (1993).

The Notice of Intent for the Desert Harvest Project notes that the BLM segregated the public lands located within the Desert Harvest Project's application area from appropriation under the public land and mining laws, but not the mineral leasing or material sales acts, for a period of 25 years for the purpose of protecting potential sites for future solar energy development pursuant to 43 CFR 2091.3-1(e) and 43 CFR 2804.25(e) (76 FR 38416, June 30, 2011). It is clear from the precedent stated above, that the lands set aside by BLM for segregation remain subject to a federal power reservation under the FPA for the Eagle Mountain Project.

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[3] *Eagle Crest Energy Company*, Draft Environmental Impact Statement, FERC Docket No. 13123 (Dec. 23, 2010), http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=12518824.

[4] *Eagle Crest Energy Company*, 124 FERC ¶ 62,126 (2008).

We would also like to point out that the map entitled Regional Setting with Vicinity Projects, enXco – Desert Harvest Solar, CACA 049491, displays other proposed projects in Chuckwalla Valley area, but does not include the Eagle Mountain Pumped Storage Project.

We are available to answer any questions you may have about the Eagle Mountain Pumped Storage Project. We appreciate your attention to our concerns.

Sincerely,

Steven Lowe, President
Eagle Crest Energy Company

cc: John Kalish, Field Manager
Holly Roberts, Associate Field Manager
Peter Godfrey, Hydrologist

United States Department of the Interior
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IN REPLY REFER TO
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Eagle Crest Energy Company
Attention: Steve Lowe
74-199 El Paseo Drive
One El Paseo West Building, Suite 204
Palm Desert, California 92260

Dear Mr. Lowe,

Eagle Crest Energy Company (ECE), has filed an application with the Palm Springs-South Coast Field Office, Bureau of Land Management for the construction, operation and maintenance of a FERC project, the Eagle Mountain Pumped Storage Project.

On June 22, 2009, the company also filed a Final License Application with the Federal Energy Regulatory Commission (FERC) for the project.

The project is proposed to be constructed, in part, on land which is subject to on-going litigation involving the Eagle Mountain Landfill Project. BLM will not accept an application for these lands until the case is settled.

Your SF-299 application does not include the correct legal description for the project and makes reference to the portions of the Draft License Application. The Draft License Application has been superseded by the Final License Application. Please file an amended SF-299 to reflect the location change as referenced in Volume 6 of the Final License Application.

According to Federal regulations contained in 43 CFR 2804.14, BLM is required to be reimbursed for the costs incurred in processing a right-of-way application. We have determined that the appropriate processing category for your application is Category 6. The nonrefundable processing fee for a Category 6 is all reasonable costs incurred in processing your application. Enclosed is a cost recovery agreement in which we have

estimated the cost of your application to be approximately $106,685. An initial deposit of $20,000 is required for processing your request. We will proceed with processing your application upon receipt of the amount.

Please sign the agreement and return with a check payable to DOI-BLM, at the above address. We will sign and retain a copy of the executed document.

Please be aware that you may not legally carry out any proposed activities on public lands managed by BLM until you have received an authorization from our office.

If you have any questions, please contact Mike Bennett at (760) 833-7139.

Sincerely,

CHill Acting for

John R. Kalish
Field Manager

Attachment – Cost Recovery Agreement

cc: Jeff Harvey

COST REIMBURSEMENT AGREEMENT
BETWEEN
EAGLE CREST ENERGY COMPANY
AND
THE BUREAU OF LAND MANAGEMENT
PALM SPRINGS – SOUTH COAST FIELD OFFICE

BLM Cost Recovery Project Number 5101-ER___

I. AUTHORITY

A. Section 304(b) and 504(g) of the Federal Land Policy and Management Act (FLPMA) [43 U.S.C. 1734(b) and 1764(g), as amended.

B. 43 CFR Subpart 2804

II. PURPOSE

This Cost Recovery Agreement ("Agreement") between Eagle Crest Energy Company ("Applicant"), and the Bureau of Land Management ("BLM"), establishes procedures to reimburse BLM for costs incurred in processing Right-of-Way Application Serial No. CACA 50946 ("Application") for a proposed right of way within the boundaries of the BLM Palm Springs – South Coast Field Office.

III. GENERAL PROVISIONS

A. BLM agrees to process the Application to the extent funding under this Agreement permits. Processing will include, but not be limited to: coordination, preparation, administration and approval of all necessary environmental analyses, including preparation of an Environmental Impact Statement (EIS); consultation with appropriate Federal, State, Tribal, and local officials; preparation of the administrative record; resolving any protests, appeals and/or litigation that might result from the proposal; preparation of all decisions and authorization resulting from those decision; monitoring the construction, and other necessary processing actions consistent with the final determinations.

B. BLM will advise Applicant of the nature and extent of all studies needed to comply with NEPA and other requirements, as discussed in Section A above, and BLM will have the opportunity to use studies prepared by Applicant's personnel and consultants wherever such studies meet BLM standards and the requirements of law.

C. BLM will administer this Agreement and process the Applications as to avoid unnecessary employment of personnel, limit expenditure of funds, and make every reasonable effort to process the application and make a decision concerning the Application in a timely and workmanlike manner.

D. The parties understand and agree that the purpose of this Agreement is limited to reimbursement of costs incurred by BLM and that it does not control any matter beyond the scope of this Agreement.

E. The designated points of contact/project manager with whom each party to this Agreement will communicate concerning any aspect of this agreement are as follows:

BLM	Applicant
Bureau of Land Management Mike Bennett, Assistant Field Manager Palm Springs-South Coast Field Office 1201 Bird Center Drive Palm Springs, CA 92262	Eagle Crest Energy Company Steve Lowe, President One El Paseo Building 74199 El Paseo, Suite 204 Palm Desert, CA 92260

The Parties shall make its best efforts to utilize the same point of contact/project manager throughout the duration of the agreement; however, either party may designate a different point of contact/project manager by notifying the other party in writing of such change.

IV. REIMBURSABLE COSTS

A. In accordance with Section 304(b) of FLPMA and 43 CFR 2804.19, Applicant agrees to reimburse BLM for reasonable costs incurred by BLM for processing the Application, and should the Application be approved, for issuing a right-of-way grant and monitoring the construction, operation, maintenance and termination of authorized project facilities.

B. Further, in accordance with 43 CFR 2804.14(f), Applicant waives consideration of reasonable costs, as would be determined under 43 CFR 2804.20 and 2804.21, and agrees to pay all actual costs incurred by BLM related to this Application.

C. Actual costs incurred by BLM include direct and indirect costs, as defined in Exhibit 1. Exhibit 2, Financial Plan, is an estimate of direct and indirect costs expected to be incurred by BLM in processing the Application. This cost estimate may be amended, in writing, should actual costs exceed estimated costs.

V. PAYMENTS AND ACCOUNTING

A. Applicant's reimbursement of BLM's actual costs shall consist of an initial deposit of $20,000, and additional period payments, to complete processing the Application, and, if approved, issue the grant, and monitor the construction, operation, and termination of the project.

B. The total reimbursement for costs incurred by BLM in processing the Application is estimated to be $106,685. If BLM determines that additional funds are needed, BLM shall re-estimate such amounts and provide Applicant written notice of the determination and resultant estimated costs. If payments made by Applicant exceed actual costs incurred, BLM will promptly refund the excess or adjust the next billing to reflect the excess.

C. BLM shall monthly review case processing and costs incurred. When BLM determines there are insufficient funds remaining for the next period of planned work, it shall inform the Applicant of the work proposed to be done and request a further deposit. Deposits must be received prior to BLM incurring costs.

D. BLM will provide Applicant quarterly statements of BLM expenditures, within 30 days of the close of the quarter (March 31, June 30, September 30 and December 31).

E. Applicant shall have the right to conduct, at its own expense, reasonable audits of the books, records, and documents of BLM relating to the items on any particular accounting statement provided by BLM. Applicant shall have 30 days after receipt of the quarterly statement to raise objections to, or dispute, any particular entry or cost item

F. BLM shall provide full justification of any disputed entry or cost item within 30 days of receipt of the objection or will delete the entry to cost item. If Applicant still objects to the entry or cost item, Applicant may submit an appeal to the State Director within 30 days of receipt of BLM's justification. The State Director's decision is the final administrative decision related to such entry or cost item.

G. In accordance with 43 CFR 2804.27, should BLM deny the Application, Applicant must reimburse BLM for all costs BLM incurred in processing the Application. If Applicant withdraws the Application, Applicant must reimburse BLM for processing costs incurred by BLM in closing its review of the Application.

VI. EFFECTIVE DATE

This Agreement shall be effective as of the latter date of its execution by both parties. Unless terminated earlier, this Agreement shall continue so long as Right-of-Way Case CACA 50946 is active.

VII. TERMINATION

Either party to this Agreement may terminate this Agreement with written notice to the other party. However, termination of this Agreement does not waive Applicant's responsibility for payment of BLM costs incurred as provided in Section VI of this Agreement.

VIII. OTHER PROVISIONS

Except as specifically provided in this Agreement, Applicant does not waive any administrative or jurisdictional rights it may otherwise have.

IX. SIGNATURES OF AGREEMENT

For Bureau of Land Management	**For Eagle Crest Energy Company**
acting for	
Signature	Signature
John Kalish	
Typed Name	Typed Name
Field Manager – Palm Springs	
Typed Title	Typed Title
7/13/09	
Date	Date

Exhibit 1
Description of Direct and Indirect Costs

Direct costs are those costs which can be specifically identified with the Application and which are incurred for the benefit of Applicant in that the costs would not have been incurred but for the Application and are appropriate in order for BLM to process the Application. Examples of direct costs include, but are not limited to, personnel costs in the form of wages paid to BLM personnel working on the Application, with allowances provided for fringe benefits and leave surcharge rate and any overtime associated with processing the Application; travel expenses; purchased services, if necessary, such as printing, automated data processing services and photographic reproduction; and any miscellaneous supplies and equipment of a specialized nature, the use of which is directly applicable to processing the Application.

Indirect costs are those which cannot be specifically identified with the Application. These indirect costs have been calculated at a fixed rate of 19.7% of direct costs. This percentage figure has been developed in accordance with Department of the Interior procedures and represents those administrative and program costs, excluding management overhead, which can be attributed to processing the Application. Indirect costs included a portion of the costs for capitalized and non-capitalized equipment; space rental; telephone services; postage; personnel transfer costs; budget and program development; administrative and clerical support; training, safety management; public information, inquiries and reports; cartography and basic series mapping; aviation management; telecommunication; maintenance of equipment and tools; and systems design and implementation.

Excluded from indirect costs are costs for managerial work; evaluation of field office activities; program coordination; technical program direction; environmental educational; interagency planning; studies and research; preparation of environmental documents relating to general program planning; law enforcement; and firefighting.

Information to be Supplied by Applicant

Technical drawings, Plan of Development, survey drawings and other information specifically related to the proposed project. A cultural survey of the proposed right of way area will be required.

Coordination with Other Agencies

BLM will coordinate this proposed project with at least the following other agencies:

Federal Energy Regulatory Commission
U.S. Fish and Wildlife Service
State Historic Preservation Department
Environmental Groups
Applicable Habitat Conservation Program Managers
Other Affected Parties

NATIONAL PARKS CONSERVATION ASSOCIATION

Protecting Parks for Future Generations

October 20, 2011

Lynette Elser, Planning and Environmental Coordinator
Bureau of Land Management
22835 Calle San Juan de Los Lagos
Moreno Valley, CA 92553

Dear Ms. Elser:

The National Parks Conservation Association (NPCA), a non-profit whose mission is to "Protect and enhance the national parks for present and future generations," would like to submit the following comments on enXco's Desert Harvest Solar Farm. NPCA has almost 350,000 members nationwide and 48,000 members in the state of California. We work with communities, the media and elected officials to raise awareness about the value of protecting and supporting America's national parks. NPCA believes our nation must invest in a renewable energy future to become independent from foreign oil and reduce the worst impacts of climate change, but do so in such a way that does not jeopardize our national parks and other ecologically sensitive areas.

EnXco's proposed 150 Megawatt Desert Harvest Solar Farm is situated in the Chuckwalla Valley of California, north of Interstate 10 and directly to the south of the approved Desert Sunlight Solar Farm. The footprint of the proposed Desert Harvest Solar Farm is 1,280 acres and would include photovoltaic solar arrays, a substation, administration buildings, maintenance facilities and a transmission line. If approved, construction would commence in late 2013 and would take approximately 9-12 months to complete. The current footprint of the project is adjacent to the Chuckwalla Desert Wildlife Management area and is approximately 2 miles from the border of Joshua Tree National Park.

During the scoping period, the Bureau of Land Management is soliciting public comment on issues, concerns, potential impacts, alternatives, and mitigation measures that should be considered in the analysis of the proposed action. NPCA would like to comment on the following issues:

Pre-existing Policy on Renewable Energy Development

NPCA is concerned that this development does not comply with the February 24, 2011 Frost Poole Memo which states that renewable energy projects other than the Desert Sunlight Solar Farm will not be pursued in the Eagle Mountain area on Bureau of Land Management Land.

1)How does EnXco's Desert Harvest Solar Farm comply with the February 24, 2011 NPS/BLM Frost/Poole Memo?

Joshua Tree Field Office, 61325 Twentynine Palms Highway, Suite B
Joshua Tree, CA 92252

Telephone (760) 366-7785 • Fax (760) 366-3035

Endangered Species

The Chuckwalla Desert Wildlife Management Area lies directly to the west of the proposed Desert Harvest Solar Farm footprint. The Chuckwalla DWMA was set aside as part of the Eastern Colorado Recovery Unit for the threatened Desert Tortoise.

The 2011 Revised Recovery Plan for the Mojave Population of Desert Tortoise by the U.S. Fish and Wildlife Service establishes a target of "No net loss" (p. 63)of current habitat within conservation areas. It goes on to say that "Habitat degradation or loss in some areas should be balanced with habitat acquisition or restoration of degraded habitat in other areas, as specified in the West Mojave Plan for example." (p.63)

The adjacent Desert Harvest Solar Farm could have adverse impact on the recovery unit in several ways. First, the development could degrade habitat and construction could introduce invasive species. Second, construction could mean the building of new access roads that could artificially inflate the population of predatory ravens, thus negatively affecting the population of desert tortoise. Finally, the project could impede the movement of Desert Tortoises between protected areas.

NPCA raises the following questions about impacts to the Chuckwalla Desert Wildlife Management Area to be addressed in the draft EIS.

1) How will the creation of surface roads to the project impact the Chuckwalla DWMA and how will these roads be mitigated?
2) What sort of predator control program will be implemented to control the potential increase in predatory ravens?
3) How will invasive weeds that are introduced to the project site and adjacent Chuckwalla DWMA be controlled as they will negatively impact critical desert tortoise habitat?
4) How does the Bureau of Land Management intend to monitor this project and the cumulative effects of other proposed projects on desert tortoise populations and is scientifically substantive data currently available to serve as a baseline?
5) How will this project and other proposed projects in the Chuckwalla Valley potentially impede wildlife corridors and limit the gene pool for animals like the threatened desert tortoise?
6) Will mitigation such as ecological restoration, construction of vehicle barriers and education programs designed to improve desert tortoise habitat and population viability be considered for this proposed project?
7) NPCA requests the Bureau of Land Management and EnXco to examine alternative locations for this project that would cause less negative impact to Joshua Tree NP and its dependent resources, preferably on disturbed lands.

Water Resources

The Chuckwalla Valley Groundwater Basin receives both surface and groundwater inflow from the Pinto Valley Groundwater Basin. The water enters into the Chuckwalla Valley Groundwater Basin through a gap in the bedrock. A portion of Joshua Tree National Park (JTNP) overlies the Pinto Valley Groundwater Basin.

Although photovoltaic arrays need a great deal less water during project operations, water use can still be substantial during construction when water is used as a palliative to minimize dust, for construction materials and for teams of workers. NPCA would like to see the following questions addressed in the draft EIS related to water use for this project:

1) How will water use for this project and the cumulative water use for the proposed Eagle Crest Pumped Storage Project, Desert Sunlight Solar Farm, Chuckwalla Solar Project, Palen Solar Project and Riverside East Solar Energy Zone:
   A) Impact groundwater beneath the Chuckwalla Valley;
   B) Affect groundwater in the Pinto Basin beneath Joshua Tree National Park;
   C) Impact surface water like seeps and springs throughout this region; and
   D) Affect riparian Vegetation

NPCA would also like to see the following considerations addressed in the draft EIS:

-A meaningful, scientifically based discussion about desert groundwater recharge rates that consider climate change predictions for our area, especially increasing variability in precipitation for the California desert and overall diminished precipitation.

- A meaningful, scientifically based discussion about the amount of available groundwater. Assumptions in the EIS about the number of acre feet in the groundwater should the water already allocated for habitation, agriculture and industry in the Chuckwalla Valley and surrounding area. Studies should include an analysis from the United States Geological Survey studies, other government agency or independent university analysis if possible.

Air Quality

Joshua Tree National Park is designated as a Class I Airshed, which means that it receives the highest level of protection under the Clean Air Act. However, the park consistently exceeds the 120 parts per billion ozone concentration level set by the Environmental Protection Agency for human health and ground-level ozone concentrations are among the highest recorded in the National Park System. High levels of ground-level ozone have the potential to human health and plant life.

Poor air quality frequently obscures the park's scenic vistas. During certain times of the year, visitors at the mile-high Key's View observation area can barely see the tip of 10,000 foot high Mount San Jacinto, a mere 50 miles away. In fact, the natural visual range from high points in Joshua Tree should be approximately 120 miles, but on many days air pollution limits it to 35 miles and less. Finally, atmospheric nitrogen and sulfur deposition in Joshua Tree National Park due to air pollution is well above naturally occurring levels. Atmospheric nitrogen deposition fuels the growth of invasive species in Joshua Tree and has altered the park's fire regime.

The Desert Harvest Solar Farm has the potential to harness a clean, renewable source of energy, but at the same time, construction and the removal of native vegetation could adversely impact air quality in the

Coachella Valley and Joshua Tree National Park. NPCA raises the following questions to be examined in the upcoming draft EIS.

1) How will the cumulative effects of the removal of native vegetation and the disturbance of soils from projects like the Desert Sunlight Solar Farm, the proposed Desert Harvest Solar Farm, Ridgeline Energy Project, Chuckwalla Solar Project, Palen Solar Project and the Riverside East SEZ impact air quality in the Chuckwalla Valley, surrounding wilderness, adjacent Chuckwalla Desert Wildlife Management Area and Joshua Tree National Park?

2) How will the cumulative and project-specific effects of the operation of vehicles and motorized equipment during construction for this project and the aforementioned projects affect nitrogen deposition and ground level ozone in the Chuckwalla Valley, surrounding wilderness, adjacent Chuckwalla Desert Wildlife Management Area and Joshua Tree National Park?

3) How will the cumulative air quality impacts of the aforementioned projects be adequately monitored before, during and after construction so that the National Park Service and other land management agencies have accurate data on the cumulative and individual impacts of the aforementioned projects?

4) What steps will be taken to mitigate and improve air quality from the impacts of the aforementioned projects? What steps will be taken during construction to protect the scenic viewsheds and visibility from Joshua Tree National Park?

5) What steps will be taken to mitigate and minimize light pollution and fugitive dust that could harm Joshua Tree National Park's night sky resources?

6) What design steps will be undertaken to minimize this project's form, line and color from mountainous viewing points within wilderness or Joshua Tree National Park?

NPCA would like to thank the Bureau of Land Management for the opportunity to submit these scoping comments for EnXco's proposed Desert Harvest Solar Farm in eastern Riverside County. We welcome the opportunity to review the draft Environmental Impact Statement and see how these questions and issues are addressed.

Sincerely,

Seth Shteir, California Desert Field Representative
National Parks Conservation Association
61325 Twentynine Palms Hwy., Suite B
Joshua Tree, CA 92252
sshteir@npca.org
760-332-9776

NATIONAL PARKS CONSERVATION ASSOCIATION
Protecting Parks for Future Generations

Joshua Tree Field Office, 61325 Twentynine Palms Highway, Suite B
Joshua Tree, CA 92252

Telephone (760) 366-7785 • Fax (760) 366-3035

From: Susan Fleming [mailto:mrsfungus53@gmail.com]
Sent: Saturday, October 15, 2011 2:52 PM
To: BLM_CA_Desert_Harvest
Subject: Solar

I am a concerned citizen of Lake Tamarisk Desert Resort in Desert Center California. The proposal for additional Solar Sites in our area is disturbing. First Solar has already inuated our area. There is no room for more at this time nor any desire for more in the future. We are a very remote, quiet, undisturbed, unpopulated area. There is a population of approximately 300 during the winter months when the 'Snowbirds' are here. The population of the 'Snowbirds' alone is appoximately 150 plus. We are here by choice because of the beautiful quiet desert. We are here for the Golf Course, the Bike Riding, Walking, and ATVing. With the Solar Farms taking over our beautiful desert and all of the construction trucks, people, ect. we are no long a quiet beautiful area. The quiet on the golf course and outside on our patios has been disturbed by many extra vehicles, large and small. This is only the first.

There has been no study on the affect of Solar and tranmission lines and Humans. Many studies have been done on plants, animals, ect., but not on humans. These Solar Plants are very close to our community. If nothing else, there should be a buffer zone between our community and the Solar.

Our night skies are untouched by ,,,,,,,,,, lights. Will the night lights at the Solar plants disturb our night skies???

Will the Transmission lines, block our views and endanger our health???

More studies need to be done on where this is happening. There is no housing for even a small portion of any employees much less many. Our roads cannot handle the amount of trips even of Shuttle Busses that will go down our roads. There are no shoulders on our roads, so the 'humans' will have to give up riding their bikes and walking for their health.

Building these Solar Farms near a Community really needs further research. We ask questions that no one has answers for. We just don't want our beautiful, quiet area ruined by too many Solar Farms with no consideration to the Community or people. More research and information needs to be provided before constructing more Solar.

Sincerely,
Susan Fleming
Lake Tamarisk Desert Resort
mrsfungus53@gmail.com
425-346-6669

From: wdgreen4 <wdgreen4@aol.com>
To: LElser <LElser@blm.gov>
Subject: BLM,desert harvest solar project EIS
Date: Thu, Oct 13, 2011 3:09 pm

MR.& MRS. Walter D. Green
Phone: 760-227-3215
Address: PO Box 306
Desert Center, Ca. 92239

We are for solar projects, but! They are being pushed through without any consideration for local residents or the unique Flora and Fauna in this area. Ancient Ironwood forests are suppose to be protected. The BLM needs to ask the local population about were the desert lilies actually bloom, more bloom out of the Desert Lily Preserve than in it. Native American petroglyphs are found here and arrow heads ect. can be found in this valley. You are bulldozing over areas you know very little about. There seems to be no proof that even the water supply has been considered. There are reports that the water being used is not renewable. Water is drafted from from the aqueduct, All American cannel, for building projects in Coachella Valley. Why aren't they using the aqueduct here? With over 8 solar projects being approved for this small valley, the BLM seems to be rushing to accommodate solar energy at all cost. Even though it has yet to be proven as a cost effective source of energy or even environmentally sound.

No current research has been done on this valley, meetings are unadvertised in this area and people who should have answers seem to be uninformed and have no answers. Few people know what is going on. BLM seems to think telling someone 50 to 100 miles away is adequate. IT isn't! What should be addressed in your environmental document.— What will be left of this valley for local residents, if you ruin the water supply and kill off the unique desert vegetation?

RECEIVED
BUREAU OF LAND MGMT.
11 OCT 18 PM 2: 13
CALIF. DESERT DISTRICT
MORENO VALLEY, CA

REPORTER'S TRANSCRIPTION OF COMMENTS RE:
BUREAU OF LAND MANAGEMENT
PUBLIC SCOPING MEETING
DESERT HARVEST SOLAR PROJECT EIS
OCTOBER 2011

DATE: Monday, October 3, 2011

TIME: 1:00 P.M. to 2:00 P.M.

LOCATION: University of Riverside
Palm Desert Graduate Center
75080 Frank Sinatra Drive
Palm Desert, California

REPORTED BY: Rhonda K. Goodman
CSR No. 8857

REFERENCE NO: 28719A

APPEARANCES:

IAN BLACK, enXco

LYNNETTE ELSER, Bureau of Land Management

MARISA MITCHELL, Aspen Environment Group

AUBREY MESCHER, Aspen Environment Group

ALEX McINTURFF, Aspen Environment Group

THE PUBLIC:

REBECCA FORBES, Caltrans

ELIZABETH MEYERHUFF, Eagle Crest Energy

PATRICIA PINON, La Cuna de Aztlan Sacred Sites

OLLIE BEYAL, Observer

PHILIP LUONG, Lakeview Ranch

ULRICH J. SAUERBREY, US LandLink

KMIR TV

PALM DESERT, CALIFORNIA

MONDAY, OCTOBER 3, 2011

1:49 P.M.

(Presentation given by Ms. Elser and Mr. Black.)

* * *

MS. ELSER: We do have a court reporter here who will be recording your comments. We are doing that because we want to know exactly what you say and use that information in writing our documents. When you come up, state your name clearly so she will know who is talking for the record.

MS. PINON: I prefer not to be on camera. Can I request that? Thanks.

KMIR: (Turned camera off.)

MS. PINON: My name is Patricia Pinon. I am the Chairperson of the La Cuna de Aztlan Sacred Sites Protection Circle. We are advocates of our Cultural Resources located along the lower Colorado River Basin, and we are also Environmental Justice Advocates.

For the past 56 years, we have been studying "The Aztec Place of Origin" here in the surrounding Palo Verde, Parker, and lower Colorado River Valleys.

In 1975 the Riverside County Tribes organized opposition against the Sun Desert Nuclear Power Plant proposed to be built at the base of the Sacred Mule Mountains. Calli, in the Aztec language, and Hamoc-Avi in Mohave, and I'll give you these names. After four years of intense struggle, we were able to stop the project in 1979. This gave us the reputation of being the first indigenous group in the United States to stop a nuclear power plant from being built.

In 1992, the Fort Mojave and the Colorado River Tribes organized the Colorado River Anti-Ward Valley Coordinating Committee; and after eight years, we stopped the proposed Ward Valley Nuclear Toxic Dump located between the Sacred Turtle the and Avi-Kawme "Spirit" Mountains located 15 miles northwest of Laughlin, Nevada.

In the year 2000, we organized La Cuna de Aztlan Sacred Sites Protection Circle. Said Circle is comprised of 15 Native American individuals dedicated to physically protecting the Sacred Sites. On February 15, 2008, La Cuna de Aztlan Sacred Sites Protection Circle signed a Memorandum of Understanding together with the Southern Low Desert Resources Conservation and Development Council with the Bureau of Land Management. The MOU specifies the formation of a partnership for protection of cultural resources, and to protect the Blythe Giant Intaglios, other geoglyphs, and several hundred sacred sites that are located along the Colorado River from Needles, California, to Yuma, Arizona.

La Cuna de Aztlan Sacred Sites Protection Circle is totally against this Solar Energy Project. The California Energy Commission Cultural Resources Docket No. 09-AFC-8, recorded on June 22nd, 2010, the Summary of Conclusions, Testimony of Elizabeth A. Bagwell, Ph.D., and Beverly E. Bastian, reveals the following, and I quote, "Staff finds that the GSEP construction impacts,

> when combined with impacts from past, present, and reasonably foreseeable projects, contribute in a small but significant way to the cumulatively considerable adverse impacts for cultural resources at both the local I-10 Corridor and regional levels.
>
> "This analysis estimates that more than 800 sites within the I-10 Corridor, and 17,000 sites within the Southern California Desert Region, will potentially be destroyed. Mitigation can reduce the impact of this destruction, but not to a less than significant level."

The proposed project is in direct violation of State, Federal, County, and United Nations laws that protect Native American Sacred Sites, including the following: United Nations Declaration on the Right of Indigenous People, Resolution of 2007, which was adopted by the General Assembly during the 107th plenary meeting and signed by President Barack Obama on December 15, 2010. This violates the Native American Sacred Places, dated March 6, 2003, SB-18; Native American Sacred Lands Act, dated June 11, 2003, HR-2419; the Sacred Land Protection Act, July 18th, 2002, HR-5155; the Native American Sacred Sites Protection Act, February 22, 2002. That was Senate Bill 1828; Accommodations of Sacred Sites and Federal Land, signed by President Bill Clinton on May 24, 1996, Executive Order 13007; Native American Graves Protection and Recreation Act of 1990; Archeological Resources Protection Act of 1979; American Indian Religious Freedom Act, August 11, 1978; the Civil Rights Act of 1968; and Antiquities Act of 1906.

The Solar Power Project will destroy thousands of pristine desert environment and will destroy thousands of sacred turtles, horny toads, as well as other animals that live in the area. The turtle and the horny toad are two of the most venerated sacred animals among all the indigenous nations, especially along the Colorado River. The turtle is the nahualli (animal representation) of Mother Earth, and its image is seen in the center of the Aztec Calendar.

The Southern California blackout of September 10, 2011, proves that we should build these solar power projects in urban areas. This is where the majority of the energy is needed, because of the risk of another blackout. As we've now have experienced, one man's mistake paralyzed six million people's lives; and as we know, the long distant transmission lines can easily be sabotaged.

According to The Press Enterprise article on September 11, 2011, "The nation's transmission lines remain all too vulnerable to cascading failures."

La Cuna de Aztlan Sacred Sites Protection Circle is available to give tours to archeologists and anthropologists interested in visiting the sites described in this article and anybody that would like to visit please give us a call if you are interested in seeing ancient sacred sites.

Thank you.

MS. ELSER: Thank you for your comments.

Does anybody else have a speaker card and wish to make comments?

Okay. If you do have comments that you think of later, please send them to us in writing.

(Ms. Elser gave closing comments.)

(The Public Scoping Meeting held in Palm Desert was concluded at 2:00 p.m.)

///

CERTIFICATE OF DEPOSITION REPORTER

I, Rhonda K. Goodman, Certified Shorthand Reporter in and for the State of California, Certificate No. 8857, do hereby certify:

That the foregoing meeting was taken before me at the time and place therein set forth,

That the Public Scoping Meeting was recorded stenographically by me and thereafter transcribed through computer-aided transcription, said transcript being a true copy of my shorthand notes thereof and a true record of the statements given.

I do further certify that I am a disinterested person and am in no way interested in the outcome of this action, nor connected with or related to any of the parties herein.

IN WITNESS WHEREOF, I have subscribed my name this date: ______________________________________.

____

RHONDA K. GOODMAN
CSR NO. 8857

TRANSCRIPTION OF COMMENTS RE:

BUREAU OF LAND MANAGEMENT

PUBLIC SCOPING MEETING

DESERT HARVEST SOLAR PROJECT EIS

OCTOBER 2011

DATE: Monday, October 3, 2011

TIME: 6:00 P.M. to 8:00 P.M.

LOCATION: LAKE TAMARISK CLUBHOUSE
26251 Parkview Drive
Desert Center, California

REPORTED BY: Rhonda K. Goodman
CSR No. 8857

REFERENCE NO: 28719B

APPEARANCES:

IAN BLACK, enXco
LYNNETTE ELSER, Bureau of Land Management
MARISA MITCHELL, Aspen Environment Group
AUBREY MESCHER, Aspen Environment Group
ALEX McINTURFF, Aspen Environment Group
LEVY COX, enXco

THE PUBLIC:

TAMMIE DYE, Observer
BRYON CASTOR, Desert Center Chamber of Commerce
DAWN RETTAGLIATA, Observer
SUE FLEMING, Lake Tamarisk RV Park BOD
GARY FLEMING, Lake Tamarisk RV Park BOD
K. KAVGANN, Desert Sun
MARYEL GREEN, Observer
WALTER GREEN, Observer
HAROLD FOSTER, Resident
LARRY CHARPIED, Farmer
RENEE CASTER, Desert Center Chamber of Commerce
PATTY BELL, Resident
JOHNNEY COON, Resident
PHILLIP SMITH, CRIT
CHELSEA MINOR, Observer
SKYLER FRAZIER, Observer

THE PUBLIC (continued):

RACHEL WOODARD, Observer
DONNA CHARPIED, Desert Protection Society
G. ALVAREZ, Observer
STEVE H. JONES, Observer
LLOYD GUNN, Observer
RONALD VAN FLEET, Fort Mojave
VICKIE JONES, Observer
JULIE SMILEY, Observer
TIMOTHY W. ANDERSON, Desert Center Grape Farm
MICKEY CASTOR, Lake Tamarisk Resident
GEORGE DONALDSON, Chamber of Commerce
ORIN CASTOR, Observer
GLENN CASTOR, Observer
ALFREDO A. FIGUEROA, La Cuna de Aztlan

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DESERT CENTER, CALIFORNIA
MONDAY, OCTOBER 3, 2011
6:00 P.M.

(Presentation given by Ms. Elser and Mr. Black.)

(Interruption of the presentation.)

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MR. SMITH (I think): (No mic) Have you contacted the tribes along the river cultural ties to this ...

MR. BLACK: Yes, we reached out two months ago

MALE: What was that question?

MR. BLACK: Sorry. The question is whether or not we reached out to area tribes to get their input. There's 26 tribes identified. We reached out to 16 of those that had registered archeologists to hold a meeting, pre-scoping, to discuss what we have done in the field.

We did have a meeting. One of the archeologists was able to make it. And I believe the cultural report will be submitted and approved by the BLM sometime this month.

But, yeah, we have reached out. We tried several times ...

MALE: (No mic). I heard there will be less impact assigning it away from commercial areas, going to wilderness and less impact in the wilderness.

MR. BLACK: No. I wasn't saying less impact.

The question's whether it would go through commercial property or not, and that is to avoid commercial property. If it was a new Gen-Tie, it would be the same as any Gen-Tie.

THE REPORTER: I can't hear clearly without a microphone.

MR. BLACK: Out of respect for the court reporter, we should hold the comments. She cannot take our comments without a mic.

MR. VAN FLEET: Ron Van Fleet, Fort Mojave, Tribe Representative. My question was: Did the solar company notify the tribes, you know; and did you get a response? I heard that you said that one archeologist responded.

We're overwhelmed by the projects in Arizona that are coming out. My tribe, Melinda Ortego, she's the Cultural Resource Director of the Fort Mojave Indian Tribe. And wind projects, solar projects, it's -- her staff is overwhelmed by just those projects. And I heard about this from Fred Figueroa just this Friday. He called me up, and I have got the literature from BLM. I didn't see your project in BLM's reports that I got. And

I still have some mail that I still haven't opened up to the projects. And I'm overwhelmed, you know.

So I know that back in 1992 we did a Spiritual Run from Eagle Mountain Road here. We do a Spiritual Run in our tribe for the land, the animals, and the people. There are millions of ants, the reserves, the turtle reserves; but, you know, we did it for the whole area and for all people, and the contamination that was coming in.

I thank you for your response.

MR. BLACK: Sure. Yeah. I think BLM does have records that we sent -- we sent written letters to representatives of 12 or 14 of the registered tribes. We followed up by both e-mail and phone over the course of a six-week period. Tried to set up multiple dates to address issues and direct questions to the BLM cultural liaison and to give them an update on where our cultural surveys stood.

Our cultural surveys have been completed. Reports written. We have not seen the results, but it will be in BLM's this month.

MS. ELSER: In addition, BLM will be doing formal consultation with all of the tribes. The consultation letters were in draft two weeks ago. I have not been in the office for two weeks, because I have been in public meetings for other projects. So I can't say if they were mailed. If they weren't mailed, they will be mailed either this week or next week. But we will have formal consultation with all tribes that are interested and wish to have it.

MR. GUNN: (No mic. Didn't hear.)

MS. ELSER: This is Lloyd Gunn, BLM's Advisory Council. He meets with BLM and other members of advisory council, gives guidance on projects and just things that BLM is involved in ...

MR. GUNN: Actually, I am not an authority on that, but I represent Wildlife Council. One of my questions was: What mitigation are you going to give people in the community if you go through with this project? Like the solar projects use a great deal of water. Are you going to cut down many trees? ... trees. The temperature is 15 degrees cooler underneath ... trees. Plus the solar is going to generate more heat. And also, like you mentioned, your company is new at solar projects. So is your goal really just get the Government's approval, and then sell it to someone else?

MR. BLACK: I'll answer that last question first. No. We have no intention to sell. We are not a paneling manufacturer. We are not looking to deploy a certain panel. We are technology neutral. We're an energy developer and owner. We have no intention to sell this project at this point.

With regards to the biological impacts, Marisa is going to be studying those through the EIS process. ... we identified the fourth route because we weren't sure if the other three routes were going to work.

MS. ELSER: Ian, can you also answer: Are you considering anything to help the local community?

MR. BLACK: Absolutely. Before we even started doing work on site, I spent seven mounts, counting every two weeks, in Coachella Valley ... participate in the Coachella Valley Partnership. There are a number of different organizations in the Coachella Valley ... just coming and listening to a number of proposals in regards to what economic value can the company provide. Work force development has been a focus. A number of communities -- Blythe has been very vocal about the economic impact they have been feeling the last ten years, and Applicant's been very happy in trying to help the community in whichever --

MS. CHARPIED: (No mic) The community you are talking about is 50 miles away from this community.

MR. BLACK: Sure. And that's why I am listening to you tonight.

MS. CHARPIED: (No mic.)

MS. MITCHELL: Can you state your name, please.

MS. CHARPIED: Donna Charpied, C-h-a-r-p-i-e-d.

MR. BLACK: It's a valid question.

MS. CHARPIED: Because I am really tired of seeing in the newspaper the Coachella Valley is going to get so much from all these solar projects, but they are not going to feel the brunt of this. They're not going to have the Joshua Tree National Park destroyed that we look at every day and all of those things. This is the community that's impacted. You should have been spending seven months in this community talking with us.

Besides that I wanted to ask you another question. You said that you are not going to use Cagney (sp) and Eurite (sp), which I am very happy to hear, because I'll be breathing that the rest of my life, next to Desert Sunlight ... I read it's the best, 11.7 11.7. What are your ... efficiencies? Give me a number.

MR. BLACK: We haven't selected the panel yet.

MS. CHARPIED: It's pretty hard to give comments if we don't even know what your project is going to do.

MR. BLACK: Well, we're giving a range of materials, as well, in our application; but the project won't go commercial for another two years.

MS. CHARPIED: Maybe --

MR. CHARPIED: Larry Charpied.

If there's 8 to 12 percent loss in

transmissions, and you're only 17 to 18 percent, are you really going to make any electricity? That's my question.

MR. BLACK: It's a valid question. We model those losses in everything that we do. The process of getting a project contractor utility requires you to price it competitively versus other companies in the market, but also has to be financed by a bank or by your own company.

Yes, we do take into account losses. We do take into account efficiency panels. And that's what we ultimately will arrive at in terms of product.

MR. CHARPIED: How much is going to get to the consumer? That's my question.

MR. BLACK: I think it will depend on the time of day, and ultimately the panel we use, and ultimately the size of the Gen-Tie that we're able to get together.

MR. CHARPIED: So we don't know any of that. We're just doing that kind of like an exercise, because we don't really know what the parameters are right now?

MR. BLACK: I think it's all dynamics. Depends on the heat that is being around those lines. So right now, the losses would be significantly lower, then, say, middle of August.

MR. CHARPIED: And so would energy production be less than in the middle of the summer? How much is what I am saying.

MR. BLACK: It varies.

MS. CASTER: My name is Renee Caster.

I have a couple of comments. One thing, there's been quite a few solar projects go to Blythe or Coachella, instead of coming here; even though they are going in our front yard. I appreciate that much consideration.

One of the impact statements that we were talking about in the community, the reason why we're asking, is in the short amount of time that First Solar had started their project, we had maxed out our housing, maxed out what few utilities we had available to them. Everyone is trying to help and trying to accommodate and trying to make this a positive thing for the community. Unfortunately, since we don't have a city government of any shape or form, we have no funding to improve our infrastructure, to make it easier for us and for them.

And when you guys come in, that's going to double the capacity for something we don't have an infrastructure for. And we are looking for a way to build an infrastructure that has never been done before. And we have been turned down by the County. So we have no way to get money from the County to improve our infrastructure that doesn't exist. Yet we are being demanded by the solar companies to have things that we just don't have. And you're the second of eight projects that we know of going in. And that's why people are having a concern.

And the next meeting you come to, you are learning from this meeting, we become very educated about solar here, because of the stressful issue; and you really want to bring your techs next time. We'll ask the technical questions. We really want to know all the details. It's stressing or community. We're trying to be helpful, and we're trying to understand; but there are issues.

And my second issue: Your project is going right next to an Ironwood Forest. And Ironwood trees are a protected plant. What are you going to do with those Ironwood trees if they overlap on your project site?

MR. BLACK: We're in the process right now of doing veg mapping of the entire site to identify whether there are any sensitive species on site. Our experience in the past suggests that you have to build around those. You have to fence those off. We found that a number of projects, you just haven't been able to, not only because of the Ironwood, but because of the area in which they lie, tend to fence those off. And we're going to find out in a couple months what that looks like.

To a couple earlier points, this project is one-fourth the size of the Desert Sunlight Project. We are absolutely aware of the impacts that are going to be beyond this community. One thing, in addition to these meetings, is I have been meeting regularly with the Board of Supervisors and Riverside County trying to understand what it is they are -- what impacts they are feeling, what they are providing to the community, and can we try and find what gaps to fill in.

I don't have any answers. I would echo your concerns in that I am not entirely sure what their goals and focus are; but I'm meeting with them every week, once or twice a week, trying to get a better answer so that we can find out where we can fill in the gaps.

MS. ELSER: And when we have the draft environmental impact statements, we will come back to the community for comments on that, the vegetation management plan. On some documents in the vegetation management, we have allowed the local community to remove cactus; or sometimes nursery wholesalers, they get a permit from BLM to remove them before the project begins. So the younger ones that are able to be relocated can be relocated, and sometimes they are lost. But there will be a Vegetation Management Plan in that Draft EIS. So please read it.

And if you have comments that you would like us to consider and change that at the draft, then we will be happy to consider those comments.

Right now, we're at the very beginning stage of the project. We don't know everything. We don't have a lot of things completely thought out. We don't have complete surveys yet. We wanted to include the public at the beginning steps so that we don't get so far along in the process that there's something very basic that we didn't consider that you guys wanted us to consider, because we did not involve you at the beginning. So we don't have the answers to everything now, because we are just starting, but we know there are things.

We heard the concern about the energy efficiency. That's something that Ian is going to have to look at when they choose panels. What types of panels. Is there metal in the panels, which have more energy efficiency in the them. Address that in the draft. We will include the Vegetation Management Plan, which we typically do; but make a point to include Ironwood, and then you can comment on that. And I'll give you back the mic.

MR. FLEMING: Gary Fleming, Lake Tamarisk Resort. We're a private resort, right behind desert territory here. And we echo the same thoughts as Renee does. We're doing everything we can to get people in here, and we're maxed out, too. My concern is, along with everybody else in here, is you say you're sensitive to this area. But you are only the second one to come in ... hearing ... sensitive to this area, when this whole thing is going do be filled out, what are we looking at in ten years? You can dump all the money you want, and we're going to be sitting here with basically nothing. I'd like you to respond to that if you would.

MR. BLACK: That was brought up earlier this evening; and for what little it's worth, I've come from a town that became a resort; and the town I grew up in is no longer the town I would call home. So I share those kinds of fears. Business keeps coming in and coming in, and you're feeling like outsiders. They think they know better than the locals do. And they promise a lot of things, and it's vaguely what they will provide. I also don't want to blow any smoke in this room. I don't have answers to the questions.

To your point, Donna, I haven't been here for seven months. If it takes me coming back every two weeks for seven months to hear and come up with a better plan, that's what I will do.

With regards to the other projects, I think a number of those projects are much earlier in the process of permitting. I don't know how engaged they have been in the community. I don't know what kind of impacts they've assessed. I can't speak intelligently on those, but my understanding is that each and every project connecting to the Red Bluff Substation will have to cross BLM land, will have to cross Federal land to get to the substation. And my understanding of that policy is that they will need BLM's permission to develop the project, which means they will be required to do public scoping that maybe they aren't doing voluntarily. They will have to stand up, and you can reask that question over and over again.

There will be a line at some point, I am sure. I don't know where that is. And it won't be driven just by this community. There are questions from utilities. There are questions at state level. There are questions at federal level. There are questions at every single level that sound a lot like these questions.

What are our goals with nuclear energy? What are our goals with solar energy? What impacts? What kind of benefits do they need to provide? And it's every single conversation I have is about that.

MR. FLEMING: I think first -- Gary Fleming -- address the people who actually live in the community, not the people that, you know, want it to happen.

MR. BLACK: Sure. I agree with you.

MR. FLEMING: That might be a good starting point.

MR. BLACK: Yeah. There's different ways you can organize what it is this community needs. Maybe through the Chamber of Commerce or meetings like this. Happy to have this. The reason that I have been going to the meetings, they are monthly, they have specific topics being covered; and a lot of those are regarding education, work force development, and specific ways projects can try and help the community. But I realize that Palm Springs is 50 miles away, 60 miles away.

MR. DONALDSON: George Donaldson.

I wonder what is the temperature drop in the shaded area with wooded panels as compared to the trees, low trees.

MR. BLACK: Sure.

MALE: Ian, I'm sorry for not answering this directly, but one thing we are looking at permitting this project as a single access tracking project. That may be more economical use of the land than a fixed hill project, under which case the temperature will change, based on what time of day it is; but I'm happy to follow up and provide temperature.

MR. CHARPIED: Larry Charpied. And it's related to what you said, have you looked at private lands, too? Did you look at the 6,000 acres of disturbed lands that have that high line going through the middle of it?

MR. BLACK: Is that the SCE line?

MR. CHARPIED: Correct.

MR. BLACK: Yes.

MR. CHARPIED: You determined they weren't compatible or usable, because it's already disturbed? I thought that was one of the priorities.

MR. BLACK: Well, a number of those that surround Desert Center are owned by another developer, and they have been changing hands over time.

MR. CHARPIED: So you would have to buy them?

MR. BLACK: We would potentially have to buy them.

MR. CHARPIED: Which I would prefer over free government land.

The second thing: What studies have you done on our aquifers, as well far as, recharge, those types of things?

MR. BLACK: Our recharge study, desktop study follow-up from Desert Sunlight about recharge and about water flow.

MR. CHARPIED: Nothing, because there's nothing in there.

MR. BLACK: Sure. We have been trying to depend on existing data, rather than drilling a well to find out.

MR. CHARPIED: Make stuff up, basically, if you don't drill a well to determine how much water is there. What happens when you suck it out? How long does it take to come back to level? If you don't do any of those things, then you haven't done anything. They were lucky they didn't get sued. You will, unless you do this.

MR. BLACK: Okay. I love ideas on where we should drill a well to do that study. There have been questions about disturbing lands around Lake Tamarisk. We want to be conscious of that. We don't have a license to drill on your project site right now. We are an applicant. We don't have any rights to drill now. If there are private parcels in the area willing to allow us to do that, conduct a study, I think we're open to that.

MS. COON: My name is Johnney Coon. And I am actually going to ask pretty much the same question about private land. There's lots of disturbed land out here, Old Jojoba Field. Destroyed fields, thousands of acres. Have you attempted to purchase or -- I mean --

MR. BLACK: Yes, we have. We are actively engaged in trying to a acquire some of those disturbed lands.

MS. COON: BLM land is really public land, it is disturbed, and, you know, totally graded over. Everything is killed. All the plants and animals are gone. It's going to be ruined forever. We had some land that was grated back in the 50's, and it has very little vegetation on it. The desert's ecosystem just does not jump back like other places do. Once you have done that, it's pretty much destroyed, and it is the public's land. So it's, you know, the value is screwed. I think it's too bad, because it's beautiful out here. I have been out here for 35 years. I think it's atrocious what's happening.

I think you should first go and use all the disturbed land first. I think the Government should not be giving this land away. I think it's shameful.

MS. CHARPIED: It is shameful.

MR. CHARPIED: It's a shame.

MR. BLACK: I want to clear up one point, Larry. You might have said free land. It's not free land. We're buying it.

MR. CHARPIED: 36 bucks a year for the next 20 years.

MR. BLACK: No. No.

MS. ELSER: All of these projects come with mitigation; and besides the rent that they have to pay for renting the land, which is significant --

MR. CHARPIED: Which is what?

MS. ELSER: ... net. They also have mitigation for the desert tortoise. There will be mitigation -- mitigation will be in the Draft EIS. I cannot say that it's been determined at this point in time, but most of the applicants have had to purchase land to replace the land that they have taken in the wilderness area and wildlife management areas. We have some -- many of our applications that have been processed recently, they are purchasing five acres of land for every acre of land that they have used for their development. Almost always there is a mitigation clause, and they purchase land. They give us the money to purchase land back.

MS. CHARPIED: But that's off site. That's not land purchased here to be protected forever.

MS. ELSER: ... Joshua Tree. I think there is one in their wilderness, the park service will ... mitigation money to purchase that land if it's available for sale. Something local that the local species can use. That's our first priority. The Desert Wildlife Management Area that is a priority area for BLM to purchase land. If we can at all purchase in that Desert Wildlife Management Area, that's where we will purchase. We try to purchase high priority land for the species that's impacted as close to the project as we can.

MR. BLACK: Specifically, there are a number of extracted industries paying the federal government $30 ... We will be paying several hundred thousand dollars per year in lease payments.

MR. CHARPIED: And where does that go?

MS. ELSER: It goes to the U.S. Treasury. The BLM gets about a billion dollars a year in money, rents and royalties, return $10 billion to the U.S. Treasury. It's mixed with your taxes and everything else to pay the Federal Government's bills or cost of operation.

MR. CHARPIED: So not only do we give them the land or let them rent it, but the money goes to the Government and goes somewhere else.

MS. ELSER: It goes to wherever the money is funding. It just goes to the treasury, federal funds.

MR. BLACK: Larry, your point, maybe it's not being localized enough. Several million dollars per year BLM pays and uses taxes to Riverside County for the use of land in Riverside County. All right. If it's $3 million or $7 million, annually. It's several million dollars.

MR. CHARPIED: That's the wind projects in Coachella, not just solar.

MR. BLACK: I think it includes prison, as well.

MS. CASTER: Renee Caster, again. One for Ian, and one for Lynette.

For Ian first. When we were talking about the water, everybody talks about, you know, doing the test or going off somebody else's studies, and how it's going to be impacted. Has anybody actually tested when there's two projects at a time? When there's three projects at a time? When there's eight projects at a time? It seems to me it's on an individual project basis. I would like to know how eight projects at a time are going to affect the valley's water table.

MS. ELSER: This will be a section, Cumulative Events, it's a very large section, it looks at all of the other actions that are taking place, not only solar development or wind development, but anything that is going on from any federal agency to county. The farm is going in. The farm is going out. Anything that we know of that's reasonably foreseeable is analyzed; and they look at the water impact, also look at air, wildlife, everything that you can think of for priority analysis would be looked at. And it's called the Cumulative Effects section. Goes into great detail of all of the other projects that are potential. Terms used, reasonable foreseeable, and we will be analyzing those.

MS. CASTER: And for you, Lynette. For the BLM, I would really like to see the BLM more involved with this community, because the Palen Project almost went in without us ever realizing it, because they did not have a meeting here. If it hadn't been for a technical difficulty, they would be breaking ground right now. And we didn't realize it until that comment was made in the newspaper. Palen is a Desert Center project, and I really would like Desert Center to be involved in that it's our water, our facilities, and not Blythe.

MS. ELSER: I will certainly pass that on to the other project managers. Sometimes we are the lead agency, and we control wherever we meet, and we can make those determinations. Sometimes we are not the lead agency on a project. Energy Community is the lead agency, and they take those calls, and we go with them. Just like on this project, Riverside County is involved. We're making the calls. They are following with us. If they object, we certainly consider their objection and try to accommodate them. Sometimes the projects, we will have ultimate control. Sometimes, we don't. I will pass that comment. It is a very good comment.

I do like to have meetings in the local community. They're the ones that know more about what's going on in that community and how they are being impacted.

Did anybody else have a comment on Ian's presentation before we finish our overall?

MR. CHARPIED: Just wanted to say one more thing. You brought it up about the water. This is Larry Charpied.

We talked about the water briefly. The USGS did a study of our aquifer to determine recharge. The way they determine recharge was to measure tritium from the nukes in the '60s, got in the air, and go to the water, recharge into the water. They determine there is no tritium in our water, then they determine there's no recharge. So we're living off the ancient water. So what you are telling me now with this project and your project is that depletion is inevitable.

The project in Blythe, everybody, all you, say that this is a uniform aquifer ... that there's billions and billions of gallons of water under there. Obviously, that's not true. I am concerned about our local area, and how are you going to determine recharge?

MR. BLACK: I am just now finishing the scoping on that study. So I can't answer exactly what we are going to show for recharge, but it is one of our priorities this fall. The next two months, in the months following, we have a lot of -- we have all of the remaining studies we haven't done. We've done three quarters of protocol studies required for biological requirements. We still have ... the next three months.

MR. CHARPIED: One last thing, Lynette.

MS. ELSER: Sure.

MR. CHARPIED: We actually have a water well and three monitoring wells on our property. We would be more than happy for you to come and do baseline studies.

MR. BLACK: We'll look into that.

MS. ELSER: Any other comments now on Ian's presentation? If not, we can finish the presentation; and then after that part, over three or four more minutes, we will open it for comments again.

Does anybody have a comment now?

MR. SMITH: Yeah. My name is Phil Smith, Member of the Colorado River Tribe. I heard you mention that they'd participate? You had contacted them?

MR. BLACK: Correct.

MR. SMITH: I am kind of surprised. I haven't heard. I don't live in Parker. I live in Needles. A member of the tribe is always going to the council to talk to the people about the project ... giving me one today right now. Heard about it. Surprised. Who was the guy you met?

MR. BLACK: I don't have the list in front of me, but I can write it or Lynette. All the letters went out, as well as e-mail. That was two months ago now, but I will -- I'll provide that list of exactly who received the correspondence and phone calls.

MR. SMITH: With the BLM, I've never understand what their duties are, their job in the desert. This past concept, past a lot at one time, Desert Protection Act. And just don't seem to be working at all. It gets overridden by other political people to, you know, ramrod, go around or go under, whichever way it is. Just how are you protecting the desert?

MS. ELSER: The BLM does have a unique job. It's different than the Park Service or the Forrest Service. We do have conservation. It is a California Desert Conservation Area; but at the same time, we're supposed to be returning to the Federal Treasury value for the land. We're supposed to be using multiple use, sustainable yield. That's what the California desert is managed with. So we try to have multiple use. We try to allow recreation, backpacking. We try to allow habitat for animals. We try to have conservative cultural resources. We try to do a lot of different things. Sometimes they are in conflict. Sometimes you have to balance it, and you have to say you can't recreate here in that type of recreation, because we're trying to manage this land for something else.

That's why in the California Desert Conservation Area Plan we have things that are similar to zones, but not exactly. That's why on the one map that was up, the Desert Wildlife Management Area that's managed for tortoises, this application had a part of the solar field in that Desert Wildlife Management Area. We told Ian we can't go forward, as long as your application is in there. We manage that area for desert tortoises. We have a different use for it. That is one of the areas that's highly protected. We have wilderness highly protected and do not allow development in the wilderness area.

There's areas like the General Wildlife Area. We tend to allow some sorts of impacts in those areas. We try not to most of the time, but there are exceptions. Then we have other areas, like where this project is. It's open for use. It's not in a protected area that's managed for anything else. So the zoning type of a classification that we have for that, it is available for development. We try to manage by a type of a zoning, which has different areas, different levels of protection; but there are areas within the California Desert Conservation Area that can be heavily impacted, and that's allowable under the Plan.

MR. SMITH: In other words, it's just like any other work. If Congress wants to override something, they do it.

MS. ELSER: For us not -- it's not overriding. It's balancing a mission that's in conflict with itself. Because our mission says: Provide recreation. Provide energy development. Provide transmission corridors. Oh, yes, and conserve also.

So we have this mission that tells us to do a lot of things that can't happen on the same piece of land. So that's why we have what's kind of like a zoning setup. We have multiple use classes; and on top of the multiple use classes, we have wildlife management areas, and wilderness, and wilderness areas. So it's just the way to manage with really conflicting directions.

MR. SMITH: ... have the cultural side, the tech area, the off-roaders, and the wildlife, and all the -- in case of redevelopment, or redevelopments, I guess, which I realize that the BLM had sold some of these lands, like up in Laughlin area, sold land. Highest bidder. You have one ranger for three million acres. One ranger, or something like that, for several areas, because they can't afford -- yet, they are in the real estate business. They are selling land. Where does that money go?

MS. ELSER: It depends upon what land is being sold. The State of Nevada has a law that was enacted by Congress that allows them to sell surplus land there, and the vast majority of Nevada is public land. So the Federal Government doesn't need all that Public Land, and it's impeding some of the development of the state. There was a law so that the BLM in Nevada gets to keep the money that they get for selling the land to be able to determine which lands should be sold and which lands shouldn't. Most of the time when BLM sells, the funds go to the U.S. Treasury. If we sell land in California, the money goes to the U.S. Treasury. Nevada is the big exception there. And we do sell land when we have isolated parcels. It's very difficult to manage the isolated parcels.

In some of the areas, because the railroad development came through, the Federal Government gave the company putting in the railroad land. So they got every other square, looks like a checkerboard pattern; and the BLM had the opposite square mile squares. Very difficult to manage them that way. Some of those checkerboards remained with the railroad company. The idea was that they could trade the checkerboard parts in some pathway, because a pathway hadn't been determined at that time. Years and years and years later, when the railroad was done, we still had the checkerboard pattern. And that's when the BLM ... so we worked to purchase the checkerboard patterns back, and that land -- that's a conservation easement that was purchased back on -- easement on paper -- an easement in the way that we manage it. So those checkerboard lands are now part of BLM management, and we manage that land.

There's other times when we have parcels isolated, not connected to any other private parcel, with Federal Land all around. It doesn't have any use for the Federal Government. It's very difficult to manage it. A lot of times, it becomes a community local dump, because we're not there, and we can't be there every day. So that's where everybody puts their junk. So those types of parcels we would probably put in our plan that we would like to get rid of them, and put them --

FEMALE: How is this going to affect Desert Center before we get a crash course on BLM?

MR. SMITH: (No mic.) There's a new federal mandate, seems like federal or the companies --

MS. ELSER: That was a report put out by the Sierra Club, and I haven't actually read it. So I can't tell you. Lloyd brought it here from our Desert Advisory Council. Maybe he can answer. I have not read it yet. I just got a copy tonight. So I can't answer anything about that. You could talk to Lloyd after the meeting, and he can probably tell you all about it.

MR. SMITH: (No mic) The concern about these panels coming in, if we talk about economics or country. Better, country. They have football stuff ... different board in here. I don't think --

MALE: Let's finish the presentation.

MS. CHARPIED: (No mic.) (Something about the Environmental Quality Act.)

MS. ELSER: Actually, the Environmental Quality Act does allow a State Agency or County or CEQA purposes to adopt a Federal EIS, if it has everything that they need in it to adopt it. So they are going to, in all likelihood -- I can't speak for them, and they didn't come tonight -- but in all likelihood, they will be adopting the EIS. They are working with us, and the EIS will have a section after each analysis that says "For CEQA Purposes," and then it will list it; but it will not be officially in the EIR.

FEMALE: (No mic) ... this works, then, the CEQA purposes, we can sue the County of Riverside to advocate the responsibilities to the Federal Government and advocating their decision making powers to somebody else.

MS. ELSER: I am not going to answer that question.

MR. CHARPIED: You can say yes.

FEMALE: Thank you. He cleared it up for me.

(Ms. Elser continues the presentation.)

MR. CHARPIED: I am completely confused now. First Solar is doing a CDCA Plan Amendment; right? Aren't you guys going to do a plan amendment?

MS. ELSER: Yeah.

MR. CHARPIED: So, then, what did you just say?

MS. ELSER: Considering a plan amendment --

MR. CHARPIED: Oh, okay.

MS. ELSER: -- if we decide to grant a right of way. If we deny a project to not have a right of way, may or may not submit the CDCA plan.

(Ms. Elser continues the presentation.)

MR. GUNN: (No mic) How do you introduce an alternative plan? Say if I had an alternative plan for a solar project in that specific area, how do I introduce that to the BLM?

MS. ELSER: You could either give us written comments now, or you can --

MR. GUNN: No. Maybe a document.

MS. ELSER: You can mail it to me. You can send it to the e-mail address, which is "cadesertharvest" --

MR. BLACK: I think you have a whole slide on it.

MS. ELSER: Yeah.

-- "@blm.gov." Okay.

MALE: What about street sweeper machine and someone to operate it weekly?

MS. ELSER: Let us finish, and then formal comments.

MR. GUNN: I just want to make a comment. I have been here a couple days, and I couldn't find hardly anyone that knew there was a meeting tonight, and nothing posted in town or anything. I was just saying that I hope they could do a better job next time in letting the community know when they are having a meeting. Because I was at Desert Center for two days, and hardly anyone knew there was going to be a meeting tonight, and nothing posted in town that there was going to be a meeting.

MS. ELSER: We did not post anything in town. And when we back for the draft, we can do that by press release. Newspaper maybe would have picked up on the press release. We also sent out mail notices to people, anybody that was involved in The Desert Sunlight Project should have gotten a flier sent to their home. We used The Desert Sunlight's mailing list as our base. So if your address was with Desert Sunlight and it was clear for us to read, you should have gotten a flier. We do have a huge number that are returned; because when you sign in, if you don't write clear enough that we can figure it out, the mail gets returned, and you don't get on the mailing list. So make sure that yours is legible on the sheets here.

Let's finish up, then we will let you start.

(Ms. Elser completes presentation.)

MS. MITCHELL: We have speaker cards. First one is Alfredo Figueroa, and next is going to be Ron -- I can't read it.

MR. VAN FLEET: Van Fleet.

MS. MITCHELL: Thanks.

MS. ELSER: Come up to the microphone here.

MR. FIGUEROA: Yes. My name is Alfredo Figueroa, and I'm a representative of the La Cuna de Aztlan Sacred Sites Protection Circle. And I'm also the Chemehuevi Tribal Monitor for the Sacred Sites. And let me tell you, I'm glad to be here. I'm glad that we have a recorder. The last time up in Ivanpah, there was no recorder. Told everybody to meet in a little room there, the table, and nobody was hearing what everybody was saying. And then finally, last week or two weeks ago, down to McCoy Wash Project, there north of the Blythe project, and, by golly, they allowed us to speak after the newspaper had reported that the BLM had a new policy. Because this is America, and we're supposed to have our thoughts spoken out loud and clear. And that's why I am here.

You know, all these projects right here is just an extension of the solar, and this is just a mockery of what we have been trying to say, that we are going to develop industry and all that. Thousands and thousands of acres are proposed right here on the eastern Riverside County I-10 Corridor. My lands, you know what I mean.

He said something, our guy over here, he said, you know -- there he is. You can put it on the rooftops. We're not against solar panels, but we are against destroying our Sacred Sites and all this pristine desert. We're going to fight. There is a group suing right now. So don't worry. We're in Federal Court right now, and we're going to continue.

Now, right now, all these solar panels in China, they are protesting Jenco projects. Why? Because they are contaminating all the greenery, all the agriculture. They contaminate the water in China. China is the one that's building, and they are protesting them out right now.

The other thing, I have a friend. He worked in the one over there by Geico, that one that got destroyed. No bird flies over them. They get cooked. Bingo. That includes eagles and everything else. Let me tell you -- and every time we eat there, enterprise, all you find now is Solyndra. Solyndra, excellent example of the Governments freebies. Fast track. Run the hurdles through. Pass that law. That bill establishes when the Constitution was started, let me tell you. These blackout transmissions that happened a month ago, that's one of the, you know, why do you have transmissions? Urban yards.

Thank you very much.

MS. MITCHELL: (Time.)

Ron Van Fleet and Phillip Smith, next.

MR. VAN FLEET: Ron Van Fleet. That's what I said, we do a Spiritual Run from here, I'm the Holy Man for the tribes, not just one tribe, but all the tribes on the Colorado River; and we ended in New Mexico City at the Pyramid of the Sun and the Moon, and that was back in '92. And what we do is we run from sunup to sundown praying, you know. That's my deal here is to pray.

And you heard Alfredo say about the migratory birds going to the Salton Sea. What are they going to do with the solar panels? Right into them. There's a lot of bees, ants; and up north, what's that one we did the Spiritual Run for? Ivanpah, yeah. We did that. And there's trillions of ants on the ground. Pristine land. And they only took the adult turtles, and the baby turtles are still there on Ivanpah. For the next crop, they are there, you know. So they are just genociding all the turtles; and, yes, they moved the adult turtles. But that area is the only place where food grows for the turtles, and they cut them off to their food; and if the food does not grow at the places they connected, well, they will eat anything, you say. I don't know.

And right here is the Salt Song, which we still sing at cremation. It covers this area, this Eagle Mountain, and comes down these mountain trails, comes right across the valley, goes right into the area over here, you know, all the tribes along the Colorado River and even into Maricopa, the Hopis. They all have these Salt Songs that cover the desert. BLM, they don't recognize it. The ... already torn it up in Blythe, you know. These are dance patterns.

If you go to the cremation ground inside right now today where we're cremating, and we sing all day and all night, four days and four nights. The Mohave Bird singers will dance here. And then the Cocopahs will dance in another pattern over here, and the Cuchans come with their dance over here. And you'll see these patterns out in the desert. You'll see these dance patterns right there, and they just destroy them. And these patterns are leading to the Sacred -- to the Holy Land, as if this is our charge right here, if you could say that. This part, this is where we're going to go in the afterlife. This is where we come and go to the --

Thank you.

MS. MITCHELL: Time.

We've got Phillip Smith and Lloyd Gunn.

MR. SMITH: Phil Smith. Member of the Colorado River Indian Tribe, Needles. I attended this meeting in Ivanpah about two weeks ago, Public Comments. It was a waste of time for many of us that traveled hundreds of miles. What we said, we're not going to talk about, we have this developer. We have culture. We have these different tables. We'll break it up. You can go to each one. We didn't want that kind of meeting. We want the meeting right now, open to everybody, and open argument with each other, and come to agreement. So we didn't get that in Ivanpah two weeks ago. That's how the Government operates. Like, Ron, lot of cultural ways of thinking, and, like, desert areas. This is where we live. People don't look at it that way today. Why? What's out here? There's nothing out here?

Well, the desert was our shopping center. Everything is out here for us. Our food, herbs for our drugs, drug store. We learn how to utilize it. It's getting scraped away.

I am really concerned about the desert turtles.

They are an endangered species. Their mountain homes are getting scraped away. And the other animals, the same way, whether it's the packrats and the coyotes or the hawks that come down to feed on it. Everything is out of balance, completely out of balance. The world is getting out of balance; but here, we're really out of balance.

We have the ozone. We have all of this going on. Everything is -- just because of man, the way they think. It's for free. It's all greed. It's for money. We're dealing with other countries to build our projects for us. They get rich. We get poor, you know.

Ivanpah, my understanding, was one of the guys there doing dedication during the -- also was -- Alfredo, what was his name -- Doug Kennedy. He was also there. Kennedy is the stockholder/shareholder of these companies. China is doing this for us. I have nothing against putting projects in. Where do they put it at? They put it on our site. Transmission lines. They talk about transmission lines. Vans. It goes this way. Goes to other site. Where's our monitors? I have never seen a monitor today. From the agent's standpoint, not at Ivanpah, no where.

Thank you.

MS. MITCHELL: Lloyd Gunn. Next, Renee Caster.

MR. GUNN: First of all, I would like to echo

Phillip Smith's comments about Ivanpah. Actually, I was privileged to see a Sacred Site, and a final conference call to the California Department of Energy. And I brought up that there was a Sacred Site out there that they completely ignored, even though it was -- BLM had mentioned that there was an Indian site out there. And, well, it's too late. And I don't remember why they just kept me on the line, and it was just a bunch of back slapping, "Hey, give me your e-mails for the last three years," stuff like that.

But I also -- there are BLM -- the BLM lands are designated for certain uses; but, now, because it's renewable energy, like with the California Energy Commission is saying, well, not including BLM, but the California Energy Commission, I read some interoffice memos. It said, "We will be breaking County laws, County ordinances; and but we recommend that, because it's renewable energy. We approve it."

So it's, basically, even state laws. Federal agencies don't have to abide by state laws if they don't want to. And I would like to see BLM lands, if they're designated to a certain purpose, stay within that purpose, and not make amendments like they are doing now for renewable energy.

Thank you.

MS. MITCHELL: Thank you. Renee Caster, and then Donna Charpied.

MS. CASTER: Renee Caster. Actually, I want to bring this back to the point this has to do with Desert Center. And I really want Desert Center and the community be kept in mind by this project. The first step is coming here. Other than -- first of all, nobody else has. Your company is going to put a lot of demand on this community that, unfortunately, Sun Solar already maxed out. If and when you go by the project timeline you have, they are still going to be here when you start; and that's a huge issue for us. We're -- I mean, not only do we have conservation issues come to our Ironwood Trees and to our water, which we have protected for years --

I mean, Palm Springs and Blythe have been trying to annex this for years, and we've protected it. And now it's being used up by everybody else.

The other issues are the people. Unfortunately, I get told that we don't count. It's okay to count the tortoise, it's okay to count the flowers; but the people in the community don't count, you know. And we get the whole thing about, oh, well, it will bring our property up. Well, yeah. It might in the short run; but once my backyard's view is no longer the Ironwood Forest I have, and it's full of solar panels, is how the BLM has it planned right now, it's not going to be worth anything. And I am not going to be able to sell it to save my life.

What little tourists we get, the snowbirds, they are not going to want to come anymore with their four-by-fours. They won't want to come to our community and spend their money. They are not going to be able to come anymore. BLM is locking everything up. My biggest issue is with BLM. So, I mean -- and I learned tonight that they are probably the biggest oxymoron of all of the Government that exists. By the way, they preserve, but don't preserve. So I just really -- I know you, as a company, are limited on what you can do. I understand what the Charpieds are trying to do.

And, really, my issue is with the BLM, the solar projects, the ones making a lot of these decisions, and they bought up all the land for a fact was commercial a few years ago, because I was looking at purchasing it. BLM bought it up knowing this was going to happen. I'm concerned with how we can get some of that back, preserve what we're known for, for having nature and having unadulterated views. And for people coming out visiting us for a desert, not a big solar project. We want to grow, but I don't want to be L.A. I would rather be like Idyllwild, Big Bear. Come visit to play, and then go back home; and I am okay with that.

Thank you.

MS. MITCHELL: Thank you.

Donna Charpied and then Johnney Coon.

MS. CHARPIED: Thank you, everybody.

I'm Donna Charpied. I'm the Executive Director of the Desert Protection Society, which was formally the Citizens for the Chuckawalla Valley. And that was formed in 1992 to prevent the world's largest garbage dump being built in our community at Eagle Mountain.

VOICE: Good job.

MS. CHARPIED: And we shall continue our fights to protect this community, to protect the resources of Joshua Three National Park with our dying breath.

One thing I have to say is maybe some clarification, is that the Native Resources/Cultural Resources in this Community absolutely does affect Desert Center, and I'm very, very proud that my brother's here from the Native American Community to give us their support today. Thank you very much.

I wonder why this project is being processed through the BLM before the problematic on the EIS solar sites setting notice, putting the horse behind the cart here. Maybe your project isn't compatible here. We will find out in that PPIS. I can tell you right now, it isn't.

I have had many, many, many meetings, telephone conversations, et cetera, e-mails with First Solar. And they set the standard here for mitigation for night lighting. A large percentage, almost more than 90 percent of the transmission lines will be put underground inside the project area. There's nothing to compete with the viewshed of our National Tree Joshua Park. I agree 100 percent with Renee, that this community, just like the Morongo Basin, we can be a gateway community to Joshua Tree National Park and enjoy all of those things that they do over there. That community, they make over $20 million a year, you know, just because Joshua Tree National Park is next to it.

And we're next to Joshua Tree National Park, and we need to defend the honor of this park, because it is going to be destroyed with all these panels here.

Furthermore, this valley might be able to sustain four of these very large solar projects. Four of them have already been approved and are in construction phases right now. This community cannot sustain what this project is and what the BLM and President Obama's misguided energy policy is doing is creating an environmental genocide issue right here. We are a small community. We have a very small voice when it comes to voting. Senator Feinstein, there's only 150 of us to vote. This is why they are not putting these things near the grated areas.

They should be next to Los Angeles. They should be next to San Diego. They should be on warehouses. They should be on rooftops. They shouldn't be destroying our public lands. When this is all over, none of us will be able to live here anymore.

MS. MITCHELL: Johnney Coon and then Larry Charpied.

MS. COON: My name is Johnney Coon. I'm a 35-year, full-time resident and property owner in Desert Center and am a grape farmer. I would like to go on record as being opposed to this and all large scale solar projects on public lands. The lands in question are predominantly pristine and untouched. Our desert ecosystem is fragile and easily damaged. They support the flora and the fauna. It's beauty and value seems to be underappreciated by those in Government and business who only want to exploit this desert's precious landscape.

Once you've scraped off all living matter and turned it into industrial solar complexes, perhaps then we will know what we've lost. I believe solar energy can be a good thing if done right. Solar installations should first be on private land, disturbed land, and on every residential and business rooftop, before pristine land is used. We, the taxpayers, should not have to sacrifice our public lands so corporations can increase their profits and make a quick buck off the destruction.

Thank you very much for the opportunity to speak tonight.

MS. MITCHELL: Larry Charpied and then Harold Foster.

MR. CHARPIED: Let me tell you, I was blown away when listening to this BLM woman here. We see here that 25 percent of First Solar is in the desert tortoise area you say you are protecting, and that's why you made them go the red zone, outside where the line goes. So I don't understand what you are talking about there.

Second of all, alternatives. Jojoba renewable energy source. When you clean 4,000 or 1,000 acres of desert, all of a sudden all those CO2 changing plants that used to help the atmosphere, because they change CO2 to oxygen, are gone. So now your solar actually impacts the atmosphere daily.

With Jojoba, you actually can make jobs for 200 years, not two or three. You can put it on a car and drive the car with it and drive it somewhere else, and make energy day or night. You can't do that. We need to analyze Jojoba as a viable alternative to this, and you need to get some kind of water study, more than "he said/ she said."

MS. ELSER: Before the next speaker, I do want to clarify. The area that we did not allow them to go into is the Desert Tortoise Area, which is different from the Desert Wildlife Area. This area here, that is the yellow, that is the area that we allow absolutely no solar development. This blue area is a General Wildlife Corridor. So it is protected at a lower level than the Tortoise Area, like a zoning type of a thing. Sorry I didn't make that clear before.

MS. MITCHELL: Harold Foster and Gary Fleming, please.

MR. FOSTER: I'm Harold Foster, and I want to say that I am grateful for your coming here this evening and for your expertise in preparing for this solar project that's going on. I'm also grateful we're not here talking about a strip mining operation or a desert mining concern coming in and buying up the Kaiser property and digging up and strip mining that property up there, which is what I thought Desert Center was known as.

Before I ever moved here five years ago, it was a penal colony and a mining area. When I drove out and saw this lake, I was blown away. A lake in the middle of the desert with no power lines underground, with its own sewage system, and its own city water. What a beautiful place. I ended up buying here. I lived here for five years. Love Desert Center. But I've got to tell you, I'm really grateful for the fact that the foreclosed house next to me sold, and that every foreclosed property here has sold. And that all these properties that are leased to the solar people are leased.

I don't know if Mary's happy or not, but I know a lot of owners that are leasing these properties out to the solar people are very pleased to have the income from those empty properties. I'm very pleased to have the life of people living in those homes that were foreclosed and were blowing down. There was one home abandoned that blew down in the wind, and the owner lives off in Lake Havasu somewhere. A nice guy who lives here and worked at the mine when there was a mining community; but, you know, he wasn't taking care of his property. It was just going to ruin and going to waste, and we had to walk by it on our lakeside. Now we have a new owner who is remodeling it and fixing it up and bringing new life to it. I'm grateful for that. We've had some economic prosperity as a result.

I'll tell you something else. There were 74 vacant lots in Lake Tamarisk that were developed for those miners that were digging up Joshua Tree and selling it to the Chinese, and shipped it over there, actually.

(People speaking over him.)

MR. FOSTER: I'm grateful for the problem we have today is one of solar energy. Not that we're digging up the strip mine, not that we're fighting oil exploration. Not that we're arguing about digging up Alaska and turning that into oil, which is what a lot of politicians talk about. "Drill, Baby, drill.

Now, I'll tell you, I share a common feeling with all of you, and that is a carpet of mirrors on our desert. I have a fear of that, you know. But this little project is next to a project that's already there using the same transmission lines that are already there, that's going to create another 10 or 12 jobs for this little tiny community. Makes sense to me. Makes clear sense to me, but to carpet our desert and strip our entire desert and put mirrors on every square inch of it? No. I just say let's keep some balance and let's just be happy that we're not fighting the coal industry.

Thanks for letting me share.

MS. MITCHELL: Next is Gary Fleming, our last speaker.

MR. FLEMING: Gary Fleming, Lake Tamarisk

Resort. I can start and end this conversation with just the clean water in this area. So vital. Without water, somebody once told me, you don't have shit. No disrespect to the BLM and the solar guys. Sounds to me, listening to everybody here, that BLM, you have no idea what the impact is going to be over the next 10 to 20 years in this area.

MALE: Forty.

MR. FLEMING: Exactly.

Simple solutions, you know, community like ours or any other community. You guys are selling off the land and putting these green energy projects in. Why not have a 20-mile square radius per green energy act? Have you thought of something like that? I know it's not a solution, but it may be a start. That way we're only dealing with one, not 20 or 30 in the next 20 years here.

Thank you.

MS. ELSER: Does anyone else want to fill out a speaker card and speak?

Did anybody that filled out a speaker card and already spoke want to speak again? We do have a few minutes left.

MR. FIGUEROA: Alfredo.

One of the things I didn't say, because they gave us only three minutes -- anyway, this is one of the most sacred areas there is. That mountain is called Eagle Mountain. Cuauhtemoc, which means eagle in our Aztec language. That's why in all the tribes we all regard this mountain as a sacred mountain. And I can take you through and show you the images in the mountains that relate to the story of the Aztec Sandstone Calendar.

The last day, Solar, one of the companies that were assisting the First Solar, asked, "Can you take me out there?" I said, "Definitely." She never did contact me. Never. So I'm available. We are available. All of us are available to let you know.

We used to get the stone to build our Molcajetes, right here. This mountain right over here is called Chuckawalla, which means Alligator Ridge. The person that's getting up. Why? Because there is five endings and five beginnings. So all this is very, very sacred. Corn Strings, just right down there, these trails, everybody, all our tribes, used to use the trails here for thousands and thousands of years.

North of here, four miles from here, you'll find the 13 monuments, which are called 13-Actl. 13 monuments of the Aztec Sandstone Calendar. This is going to bring many, once it gets out; but we have to protect these sites. We have to have protection fences. And then people here in Desert Center can ... all going to be regulated. We haven't gone off publicly before, because, then, like, what happened over there at Spirit Mountain. They got some people, they were spraying. They threw them in jail. So some of the people say, "Why don't we throw them in jail, the BLM, because they know these sites are sacred, and they continue and try and see how they can overrule our sacred areas."

We have been here for thousands of years. We didn't just get off the Greyhound Bus; and these people, you want to know, the archeologists, tell Mr. Jeffery Childers and George Klein to come and see me. Come and see me. I will show them the sites.

Thank you very much.

MS. ELSER: Would anybody else like to speak?

We will conclude the meeting. Ian will be available if you have questions to talk to him about. I'm available. Marisa will be available.

Our court reporter will be going home.

(The Public Scoping Meeting held in Desert Center was concluded at 8:00 p.m.)

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CERTIFICATE OF DEPOSITION REPORTER

I, Rhonda K. Goodman, Certified Shorthand Reporter in and for the State of California, Certificate No. 8857, do hereby certify:

That the foregoing meeting was taken before me at the time and place therein set forth,

That the Public Scoping Meeting was recorded stenographically by me and thereafter transcribed through computer-aided transcription, said transcript being a true copy of my shorthand notes thereof and a true record of the statements given.

I do further certify that I am a disinterested person and am in no way interested in the outcome of this action, nor connected with or related to any of the parties herein.

IN WITNESS WHEREOF, I have subscribed my name this date: ______________________________.

____
RHONDA K. GOODMAN
CSR NO. 8857

REPORTER'S TRANSCRIPTION OF COMMENTS RE:
BUREAU OF LAND MANAGEMENT
PUBLIC SCOPING MEETING
DESERT HARVEST SOLAR PROJECT EIS
OCTOBER 2011

DATE: Thursday, October 6, 2011

TIME: 6:00 P.M. to 7:13 P.M.

LOCATION: Joshua Tree Community Center
6171 Sunburst Street
Joshua Tree, California

REPORTED BY: Rhonda K. Goodman
CSR No. 8857

REFERENCE NO: 28719C

APPEARANCES:

IAN BLACK, enXco
LYNNETTE ELSER, Bureau of Land Management
MARISA MITCHELL, Aspen Environment Group
AUBREY MESCHER, Aspen Environment Group
ALEX McINTURFF, Aspen Environment Group
LEVY COX, enXco

THE PUBLIC:

BILL LONG, Observer.
SHARI LONG, Observer
VICTOR FULL, Observer
SETH SHTEIR, Observer
DEN WINBERRY, Observer
LUKE SABUDA, Observer
KEN BAEZ, County of Riverside

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JOSHUA TREE, CALIFORNIA
THURSDAY, OCTOBER 6, 2011
6:00 P.M.

(Presentation given by Ms. Elser and Mr. Black.)

(Interruption of Mr. Black's presentation re water.)

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MR. SHTEIR: Sorry, Ian. Is that during construction? Is that annually?

MR. BLACK: No. That is overall. That is total water consumption.

MS. MITCHELL: Can you state your name.

MR. SHTEIR: Sorry. I'm Seth Shteir, National Parks Conservation Association.

MR. BLACK: So, Seth, most of that water consumption will be during construction. We will have panel washing periodically on the project. Our intent is for that amount of washing to decrease over time, soil compaction resettle the area around it. Of course, again, this is a concern both for the County and the park surrounding.

Yeah.

MR. WINBERRY: Dan Winberry, resident.

When you say go city wide, are you talking about the Morongo Basin?

MR. BLACK: I guess, there's some discussion of the definition of which, where the basins start and end. My understanding is it's the Coachella Basin Study, but it extends all the way through the East Riverside Solar Energy Zone, and that study is still underway and will be publicly available through BLM.

MR. WINBERRY: So you expect this to be basically south of the Joshua Tree National Park?

MR. BLACK: Correct. South and east is my understanding.

(Mr. Black and Ms. Elser continues presentation.)

MR. SHTEIR: Lynette, just one quick question.

That's a different e-mail than what's posted on your announcements on the BLM website. Would it be okay to send them to your personal e-mail?

MS. ELSER: You can send them to my personal e-mail, but I have 20 projects right now that I am managing; and if my personal e-mail does get full, it will bounce them.

MR. SHTEIR: Is that what's published on the paper over here?

MS. ELSER: Marissa?

MS. MITCHELL: That one is not on the paper, but I can send you an e-mail.

MR. SHTEIR: Yeah, that would be greet.

MS. ELSER: "California" is what the "ca" stands for. So it's the BLM address within the State of California, and then it's the project name, "desert harvest@blm.gov." If you send it to that one, it should not bounce. That has an infinite capacity to receive.

Yes.

FEMALE: (Sounded like Joie Fulply.) Joshua Tree.

When application is being made, do you encourage the people to look at areas of the private property owners nearby but not on BLM land who might want to develop that's already disturbed, as opposed to putting it on BLM land?

And do you charge for the right of way so substantially less that it discourages them from putting it on private property?

MS. ELSER: Actually, we do require substantial costs to be made. Almost all of our applications have at least one-to-one mitigation, which means that for every acre under their right of way, they have to buy another acre of land that BLM typically holds title to; although, sometimes California Fish and Game or some other --

Joshua Tree might get title to some of it, if there's private land holdings in the park. But because there's impacts on desert tortoise, we require mitigation; and we don't know what the mitigation is at this point in time. It will be one-to-one or one-to-five, which would mean for every one acre they disturb, they have to purchase five acres of land for habitat for tortoises.

There are requirements, also, by California Department Fish and Game for mitigation. Some of the mitigation requirements will overlap, like, if BLM requires one-to-one for desert tortoise, then California Fish and Game might require one-to-three. So we would get the first acre per acre match, and the second and third acre per acre match would go to California Department of Fish and Game.

All of the mitigation will be laid out, whatever is decided in the end in the Draft EIS, but it typically costs the developers more to actually use the federal land than if they went out and purchased land. In talking to some developers -- not at all to this developer. This is a general statement -- sometimes they don't like to take the risk of purchasing private land. They also don't like private landowner contracts, who may pass away. Their heirs may not want to do the same thing. So rent may increase. They don't have control over it. Where they feel that the Government rent level is more stable. It does increase. It's based upon a formula, but it's not the same as a private property owner who can change it to what they want.

MR. SHTEIR: I just have a quick question for Ian about the life of the project. How long?

MR. BLACK: Typically, PPA's are 20 years.

As I mentioned before, we both own and operate a good deal of wind turbines in the Palm Springs area. One thing, but a lot of those projects are actually coming to the end of their contracted life; and we are going through the decommissioning process on some, also repowering others. So we're actually in the process right now of taking turbines down and revegetating and resoiling the landscape. So we are now gaining a lot of experience in the decommissioning process, as well. And this one will have far less concrete, far less foundation than you would find on a typical wind farm.

MR. SHTEIR: Thank you.

MS. ELSER: And the other part of your question, before the projects get to this far, the Applicants have had to meet with a BLM staffer. We explain what resource values are in that land and what the conflicts are. They have had to offer other agencies to come to a meeting, including tribes, to see what their concerns are. And we have to feel that there's a viable project. We don't require that they look at other private land; but, typically, when they are looking at which land they want to include, they do scope out private land. I know from a previous scoping meeting on this project, there is a private landowner that is interested in developing, but his parcels are split, and it's a total of 600 acres. They may be two miles away from each other. I think it would be probably hard to develop very small areas like that, because you would do so much resource impact getting the transmission.

MR. SHTEIR: One last question about this; and, Ian, you might not know this already. How many access roads for servicing and stuff like that will be constructed to the east and west line?

MR. BLACK: Our goal, primary access is through Kaiser Road, existing paved county road on the western side of the project. Right now, we don't have a secondary access road; and it may be that we don't need one. But there are disturbed parcels to the east of us that right now are accessed by private dirt roads. We have not gotten that far with the County on do we need a secondary access road, but that is part of the process.

MR. SHTEIR: And that will be covered in the Draft EIS?

MR. BLACK: Yeah.

MR. BAEZ: The road right by Kaiser Road is part of the entitlement for the public use permit for the transition line that the County is looking at --

MS. MITCHELL: I'm sorry. You're Ken Baez.

MR. BAEZ: Sorry. Yeah. Ken Baez, County of Riverside. We talked on the phone this morning.

So what our responsibility is, as Lynette indicated, was to look at the primary transmission lines or any other county jurisdiction that's involved with respect to the right of way encroachment permit that they would also have to follow. We would, then, also do the analysis under CEQA Guidelines 15221, which allows us to use EIS for CEQA analysis and be current with that. So that's what we're looking at doing.

MR. SHTEIR: Sure. But it's reasonable to assume that aside from the access point through Kaiser Road that they will, you know, need some smaller servicing roads for maintenance and things like that.

MR. BLACK: Yeah. And if the Gen-Tie follows along Kaiser Road, acces will be --

MR. SHTEIR: Thank you.

MS. ELSER: And the gravel roads that you discussed in your presentation, Ian, would be with gravel roads within the fenced right of way; right?

MR. BLACK: Right. Gravel roads between rows of panels for maintenance and operations work.

MR. SHTEIR: Thank you.

MS. ELSER: It's now time for comments. Marissa will now collect the speaker cards.

MR. SHTEIR: Some of us have already turned in our speaker cards.

MS. MITCHELL: Yeah, I have one. Seth Shteir.

MR. SHTEIR: That's me.

MS. MITCHELL: Okay. If you wouldn't mind coming up here and stating your name.

MS. ELSER: And we're limiting each to three minutes; but if you would like another turn, I am sure there will be time. There's not that many people here.

MR. SHTEIR: Seth Shteir, and don't try to spell that.

Hi, my name is Seth Shteir. I work for National Parks Conservation Association. I'm the field rep for this area, and I want to thank for the you opportunity to give comments tonight.

National Parks Conservation Association is an organization that's dedicated to preserving and protecting America's national parks, and we believe in investing in renewable energy future, but believe it must be done in a way that doesn't jeopardize critical resources like our national parks and sensitive areas.

I have a number of scoping comments about this project, and many of them are questions that I hope will be addressed in the Draft EIS. And they basically break down to Air Quality, Water Resources, Desert Tortoise categories.

So the first thing I'd like submitted to the public record is that Joshua Tree National Park is managed as a Class I Airshed, which means it received the highest level of protection under the Clean Air Act. And while that is the case, Joshua Tree National Park also has many violations of ozones and other violations each year. In fact, when you stand on the mile high Key's, you overlook it. Many times you can't see the tip-top of Mt. San Jacinto, about 50 miles away. So air quality is something that we definitely struggle with at Joshua Tree National Park.

And let me just add that this project is directed at improving air quality by providing a clean, renewable source of energy, and is not based on any combustible fuel; but at the same time, construction is a messy project.

And so let me address this in two ways. One is the specific impacts to this project, which may not be huge; but I think what is needed also in this Draft EIS is a cumulative impact, a look at, basically, the de facto industrialization of the southern part of the park. And let me read you some figures on why I think that.

So down below the park in the area we're talking about, you have the Desert Sunlight Solar Farm; your project, Desert Harvest; Ridgeline Energy Project; Chuckwalla Solar Project; Palen Solar Project. And a little to the east, you've got the over 200,000 acres of Riverside East Solar Zone. So when we talk about air quality impacts from construction, we're not just talking about one project, but really talking about a concert of effects here. And we're talking about how that concert effects impact a national treasure and its Class I Airshed.

So here's a few questions that I would like to see addressed in the Draft EIS, and I would like to see them addressed particularly in respect to cumulative impacts but also specific project impacts.

How will the cumulative impacts of the removal of vegetation and disturbance of soils from projects like the aforementioned, the ones I mentioned, impact air quality in the Chuckwalla Valley, the surrounding wilderness, adjacent Chuckwalla Desert Wildlife Management Area, and Joshua Tree National Park?

No. 2, How will cumulative and project specific effects of the operation of mechanized equipment during construction of these projects also affect the Chuckwalla Valley, surrounding wilderness, adjacent Chuckwalla Desert Wildlife Management Area, and Joshua Tree National Park? Because we're looking, you know, we're talking not only about possibly fugitive dust from operations. We're also talking about many, many vehicle trips. And when you talk about the level of development we're talking about, you are talking about decreased nitrogen deposition, you're talking about increased ozone, and you are talking about increased particulate matter.

MS. ELSER: The three minutes are up.

Just a minute.

Does anybody object if he continues?

VOICES: No.

MS. ELSER: Go ahead. Just want to be fair to everyone.

MR. SHTEIR: You've got the gavel.

Okay. So next problem is, you know, you don't know what the effects are until you begin to monitor the effects. So how will those effects be monitored? That's a question I would like to see addressed in this Draft EIS. We have some monitoring stations in the park, but perhaps we need more down in that area. We need a baseline, first of all, to tell what the air quality is.

Second of all, we need to monitor the project's specific impacts and the cumulative air quality impacts of the projects I mentioned.

What steps will be taken to mitigate and improve air quality of the aforementioned projects?

What steps will be taken during construction to protect viewsheds and visibility from Joshua Tree National Park?

What steps will be taken to mitigate light pollution and fugitive dust that could harm Joshua Tree National Park's night sky resources?

A good friend of mine says that this is the one area in the park, the eastern section of the park, where you can sit outside, stare up at the night skies, be sitting next to your girlfriend or significant other, look at them and not see them. So that may be a good thing or bad thing.

So what design steps will be undertaken to minimize this project's form, line, and color from mountainous viewing positions in the wilderness or Joshua Tree National Park?

There are visual impacts from the wilderness inside Joshua Tree National Park. There are high viewing points looking down over this project. What's going to be done to minimize line, form, and color of this project?

Let me go on to water resource, and many of these comments are in a similar vein. You know, Ian mentioned that there would be, I think, 800-acre fee, Ian; is that right?

MR. BLACK: No. Less than that.

MR. SHTEIR: Less than that. So that doesn't sound like a lot, and it may not be a lot; but, again, it has to be taken in with the full concert of projects. You've got numerous projects all drawing on water resources. What will be those cumulative effects?

The Chuckwalla Valley Groundwater Basin received both surface and groundwater inflow from the Pinto Valley Groundwater Basin, part of which is below Joshua Tree National Park. Drawing on our water sources could affect water resources within the park. Could impact vegetation. Could impact wildlife species potentially.

Let me say that just a few of the projects, which will use significant amount of water, is the Eagle Crest Pumped Storage Project, Desert Sunlight Solar Farm, Chuckwalla Solar Project, Palen Solar Project, and the whole 200,000 acres of Riverside East Solar Zone.

So, specifically, in the EIS, I would like to see addressed: What is the impact of the groundwater beneath the Chuckwalla Valley? How will groundwater be affected in the Pinto Basin beneath Joshua Tree National Park? What will the impact of B.2 surface water like seeps and springs throughout the region?

And two other additional comments on this. In the Draft EIS's I have been looking through, there seems to be a real dearth of a meaningful, scientifically-based discussion on desert groundwater recharge rates that consider climate change predictions for our area. Climate change predictions for our area include increasing variability in precipitation and potentially dryer climate.

Finally, I would like to see a meaningful, scientifically-based discussion about the amount of available groundwater, which not only takes into consideration the groundwater that's going to be used by this project and other proposed projects, but also by other water being pumped for agricultural industry and habitation. In studies that are referred to in the Draft EIS, it would be great if there was a USGS component to them or USGS research.

My final comments are addressed towards endangered species. The Chuckwalla Wildlife Management Area lies directly to the west of this project. It's an area that's part of the Eastern Colorado Recovery Area for the desert tortoise. And many of you know that the desert tortoise is a threatened species. So it's pretty clear that this project will impact that eastern boundary of the Chuckwalla Desert Wildlife Management Area.

And one of the things that ought be addressed in the Draft EIS is how the introduction of invasive species through transport via construction will be mitigated. Desert tortoise thrive on native species of plants, and invasive species frequently crowd out native species, making desert habitat a lot worse.

What sort of predator control program will be implemented to control the potential increase in predatory ravens? Of course, power lines are good sources of perching. What's going to be done to prevent that?

Again, here's another monitoring question. How does the Bureau of Land Management intend to adequately monitor this area?

Does the baseline exist for localized populations of desert tortoise right now? I don't know the answer to that, but maybe somebody does.

How will we see how this is going to affect the desert tortoise population localized and on a regional level; and how will this affect overall the populations of Mohave desert tortoise on that cumulative effect scale of all those other projects?

And, finally, would mitigation such as ecological restoration, construction of vehicle barriers maybe in other parks, maybe in Joshua Tree National Park, to block illegal off-road vehicle use, and education programs about desert tortoise designed to improve people's knowledge of this threatened species be considered for this project?

So that was a very long three minutes, but I thank you for letting me have those comments.

MS. ELSER: Thank you. Do we have any other speaker cards?

MS. MITCHELL: Den Winberry.

MR. WINBERRY: Good evening. I wasn't expecting such a large audience. So I didn't prepare, but I do want to carry out a theme that he mentioned.

I've lived around here a really long time, and he talked about going up the Key's View and not being able to see Mt. San Jacinto. When I first moved here, on a clear day you could go to Key's View and see Signal Mountain is Mexico. So what you are seeing going on around here, especially in the Coachella Valley, is what I refer to as "creeping crud," where one project isn't a problem; but at some point, there are so many projects, people have forgotten how it used to be.

I would like to change themes now and talk about the night sky. Living in the desert, one of our few true natural wonders is the gorgeous night sky; and even after almost 30 years of living here, I never get tried of looking at it. So I'm worried about the lighting problem, and I would like to offer a few suggestions.

Not only do you need to minimize the amount of lighting you use, but it's very important that you consider how you light what you light. It should be shielded in such a way that it cannot shine upward, and that reflection upward is very minimal. It's also important that you use many small sources of light rather than big sources of light.

The best way to experience that is to be driving down I-15 while the Utah Department of Transportation has four enormous search lights on the other side of the highway. And it's hard to see how that light is being used, because it's all shining into your eyes, as you are going down the road. Now, I am going to guess that most of the light is on the project they are working on, and this is just scattered; but it is a massive effect. I think what they suffer from is they want to try to put up one lighting truck that lights up the whole area, and it would be so much better off if they had four small light trucks, which they distributed and used much smaller lights.

Thank you for listening to my comments.

MS. ELSER: Thank you.

Does anybody else have a speaker card?

Anybody want to speak again?

(Ms. Elser gave closing comments.)

(The Public Scoping Meeting held in Joshua Tree was concluded at 7:13 p.m.)

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CERTIFICATE OF DEPOSITION REPORTER

I, Rhonda K. Goodman, Certified Shorthand Reporter in and for the State of California, Certificate No. 8857, do hereby certify:

That the foregoing meeting was taken before me at the time and place therein set forth,

That the Public Scoping Meeting was recorded stenographically by me and thereafter transcribed through computer-aided transcription, said transcript being a true copy of my shorthand notes thereof and a true record of the statements given.

I do further certify that I am a disinterested person and am in no way interested in the outcome of this action, nor connected with or related to any of the parties herein.

IN WITNESS WHEREOF, I have subscribed my name this date: ______________________________.

____
RHONDA K. GOODMAN
CSR NO. 8857

U.S. GOVERNMENT INFORMATION GPO

processes of the earth. The USGS does not manage lands or resources. Self-governance tribes may potentially assist the USGS in the data acquisition and analysis components of its activities.

For questions regarding self-governance, contact Monique Fordham, National Tribal Liaison, U.S. Geological Survey, 12201 Sunrise Valley Drive, Mail Stop 911, Reston, VA 20192, telephone 703–648–4437, fax 703–648–6683.

G. Eligible Office of the Special Trustee for American Indians (OST) Programs

The Department of the Interior has responsibility for what may be the largest land trust in the world, approximately 56 million acres. OST oversees the management of Indian trust assets, including income generated from leasing and other commercial activities on Indian trust lands, by maintaining, investing and disbursing Indian trust financial assets, and reporting on these transactions. The mission of the OST is to serve Indian communities by fulfilling Indian fiduciary trust responsibilities. This is to be accomplished through the implementation of a Comprehensive Trust Management Plan (CTM) that is designed to improve trust beneficiary services, ownership information, management of trust fund assets, and self-governance activities.

A tribe operating under self-governance may include the following programs, services, functions, and activities or portions thereof in a funding agreement:

1. *Beneficiary Processes Program* (Individual Indian Money Accounting Technical Functions).

2. *Appraisal Services Program.*

Tribes/consortia that currently perform these programs under a self-governance funding agreement with the BIA may negotiate a separate memorandum of understanding (MOU) with OST that outlines the roles and responsibilities for management of these programs.

The MOU between the tribe/consortium and OST outlines the roles and responsibilities for the performance of the OST program by the tribe/consortium. If those roles and responsibilities are already fully articulated in the existing funding agreement with the BIA, an MOU is not necessary. To the extent that the parties desire specific program standards, an MOU will be negotiated between the tribe/consortium and OST, which will be binding on both parties and attached and incorporated into the BIA funding agreement.

If a tribe/consortium decides to assume the operation of an OST program, the new funding for performing that program will come from OST program dollars. A tribe's newly-assumed operation of the OST program(s) will be reflected in the tribe's funding agreement.

For questions regarding self-governance, contact Lee Frazier, Program Analyst, Office of External Affairs, Office of the Special Trustee for American Indians (MS 5140—MIB), 1849 C Street, NW., Washington, DC 20240–0001, phone: (202) 208–7587, fax: (202) 208–7545.

IV. Programmatic Targets

During Fiscal Year 2012, upon request of a self-governance tribe, each non-BIA bureau will negotiate funding agreements for its eligible programs beyond those already negotiated.

Dated: August 26, 2011.

Ken Salazar,

Secretary.

[FR Doc. 2011–23683 Filed 9–14–11; 8:45 am]

BILLING CODE 4310–W8–P

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[L51010000.FX0000.LVRWB09B3350]

Notice of Intent To Prepare an Environmental Impact Statement for the Proposed enXco Desert Harvest Solar Farm Project, Riverside County, CA and Possible Land Use Plan Amendment

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice of Intent.

SUMMARY: In compliance with the *National Environmental Policy Act of 1969,* as amended (NEPA), and the *Federal Land Policy and Management Act of 1976,* as amended (FLPMA), the Bureau of Land Management (BLM) Palm Springs South Coast Field Office, Palm Springs, California, intends to prepare an Environmental Impact Statement (EIS), which may include an amendment to the California Desert Conservation Area (CDCA) Plan (1980 as amended), related to enXco's right-of-way (ROW) application for the Desert Harvest Solar Farm Project (Desert Harvest Project), a 150-megawatt (MW) photovoltaic (PV) solar electricity generation project. By this notice the BLM is announcing the beginning of the scoping process to solicit public comments and identify issues related to the EIS.

DATES: This notice initiates the public scoping process for the EIS and possible plan amendment. Comments on issues may be submitted in writing until October 17, 2011. The date(s) and location(s) of any scoping meetings will be announced at least 15 days in advance through the local news media, newspapers and the BLM Web site at: *http://www.blm.gov/ca/st/en/fo/palmsprings/Solar_Projects.html.* In order to be included in the Draft EIS, all comments must be received prior to the close of the scoping period or 15 days after the last public meeting, whichever is later. We will provide additional opportunities for public participation upon publication of the Draft EIS.

ADDRESSES: Written comments related to the EIS and possible plan amendment may be submitted by the following methods:

- Web site: *http://www.blm.gov/ca/st/en.html*
- E-mail: *CAdesertharvest@blm.gov*
- Fax: (951) 697–5299
- Mail: Lynnette Elser, Planning and Environmental Coordinator, BLM California Desert District Office, 22835 Calle San Juan de Los Lagos, Moreno Valley, California 92553

Documents pertinent to these proposals may be examined at the BLM Palm Springs South Coast Field Office, 1201 Bird Center Drive, Palm Springs, California 92262 or at the BLM California Desert District Office at 22835 Calle San Juan de Los Lagos, Moreno Valley, California 92553.

FOR FURTHER INFORMATION CONTACT: For further information and/or to have your name added to our mailing list, contact Lynnette Elser, Planning and Environmental Coordinator; telephone (951) 697–5233; address 22835 Calle San Juan de Los Lagos, Moreno Valley, CA 92553; e-mail *lelser@blm.gov.* Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339 to contact the above individual during normal business hours. This service is available 24 hours a day, 7 days a week, to leave a message or question with the above individual. You will receive a reply during normal business hours.

SUPPLEMENTARY INFORMATION: The applicant, enXco, has requested a right-of-way (ROW) authorization to construct, operate, maintain, and decommission the Desert Harvest Project. The proposed project would be located on BLM-administered lands in Riverside County about 6 miles north of the rural community of Desert Center, California. The overall site layout and generalized land uses would include a substation, an administration building, operations and maintenance facilities, a transmission line, and temporary construction lay down areas, with a total proposed project footprint of approximately 1,280 acres. The project's 230-kilovolt (kV) generation interconnection transmission line would either be via the First Solar Desert Sunlight 230-kV gen-tie (as a shared facility), or would be located on private and BLM-administered lands and would utilize a planned 230- to 500-kV substation (referred to as the Red Bluff Substation). The Red Bluff Substation would connect the project to the Southern California Edison regional transmission grid. If approved, project construction would begin in late 2013 and would take 9–12 months to complete.

The BLM segregated the public lands located within the Desert Harvest Project's application area from appropriation under the public land and mining laws, but not the mineral leasing or material sales acts, for a period of 25 years for the purpose of protecting potential sites for future solar energy development pursuant to 43 CFR 2091.3–1(e) and 43 CFR 2804.25(e) (76 FR 38416, June 30, 2011).

The purpose of the public scoping process is to determine relevant issues that will influence the scope of the environmental analysis, including alternatives, and guide the process for developing the Draft EIS. At present, the BLM has identified the following preliminary issues: Air quality, biological resources, recreation, cultural resources, water resources, geological resources, special management areas, land use, noise, paleontological resources, public health, socioeconomic, soils, traffic and transportation, and visual resources.

Pursuant to the BLM's CDCA Plan, sites associated with power generation or transmission not identified in the CDCA Plan will be considered through the plan amendment process to determine the suitability of the site for renewable energy development. Since the proposed Desert Harvest Project site was not previously identified as suitable, authorization of the Desert Harvest Project will require amendment of the CDCA Plan. By this notice, the BLM is complying with requirements in 43 CFR 1610.2(c) to notify the public of potential amendments to CDCA Plan predicated on the findings in the EIS. If a land-use-plan amendment is necessary, the BLM will integrate the land-use planning process with the NEPA process for the Desert Harvest Project. A preliminary list of the potential planning criteria that will be used to help guide and define the scope of the plan amendment process includes:

1. The plan amendments will be completed in compliance with the FLPMA, NEPA, and all other relevant Federal laws, executive orders, and BLM policies;

2. Existing, valid plan decisions will not be changed and any new plan decisions will not conflict with existing plan decisions; and

3. The plan amendment(s) will recognize valid existing rights.

The BLM will utilize and coordinate the NEPA public participation requirements to assist the agency in satisfying the public involvement requirements under Section 106 of the National Historic Preservation Act (NHPA) (16 U.S.C. 470(f)) as provided for in 36 CFR 800.2(d)(3). Information about historic and cultural resources within the area potentially affected by the proposed Desert Harvest Project and potential CDCA Plan amendment will assist the BLM in identifying and evaluating impacts to such resources in the context of both NEPA and Section 106 of the NHPA. Native American tribal consultations will be conducted in accordance with applicable statutes, policies, and directives, and tribal concerns will be given due consideration, including impacts on Indian trust assets. Federal, State, and local agencies, along with tribes and other stakeholders that may be interested or affected by the BLM's decision on this project are invited to participate in the scoping process and, if eligible, may request or be requested by the BLM to participate as a cooperating agency.

Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Thomas Pogacnik,

Deputy State Director, Natural Resources.

Authority: 40 CFR 1501.7 and 43 CFR 1610.2

[FR Doc. 2011–23624 Filed 9–14–11; 8:45 am]

BILLING CODE 4310–40–P

DEPARTMENT OF THE INTERIOR

National Park Service

Transfer of Administrative Jurisdiction at or Near Great Sand Dunes National Park

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: As required by law, the Secretary of the Interior has transferred to the appropriate agencies jurisdiction over lands acquired for the benefit of Great Sand Dunes National Park, Baca National Wildlife Refuge, and the Rio Grande National Forest.

ADDRESSES: Maps, deeds, and documents related to this transfer may be reviewed at the National Park Service Land Resources Program Center, Intermountain Region, 12795 West Alameda Parkway, Lakewood, Colorado 80225–0287. The approved survey plats and field notes will be available for review at the Colorado State Office of the Bureau of Land Management, 2850 Youngfield Street, Lakewood, Colorado 80215.

FOR FURTHER INFORMATION CONTACT: John Wessels, Director, Intermountain Region, National Park Service, P.O. Box 25287, 12795 West Alameda Parkway, Lakewood, Colorado 80225–0287.

SUPPLEMENTARY INFORMATION: As authorized by section 8(a) of Public Law 106–530 (114 Stat. 2527, 2532), the Secretary of the Interior (Secretary) acquired certain lands and interests in land for the benefit of Great Sand Dunes National Park, Baca National Wildlife Refuge, and the Rio Grande National Forest. Section 8(c) of Public Law 106–530 directed the Secretary to transfer administrative jurisdiction of these lands, as appropriate, to the National Park Service for addition to and administration as part of the Great Sand Dunes National Park; to the United States Fish and Wildlife Service for addition to and administration as part of the Baca National Wildlife Refuge; and to the Secretary of Agriculture, for addition to and administration as part of the Rio Grande National Forest. The transferred lands were depicted on the map having drawing number 140/80/032 and were divided into zones as depicted on an exhibit map having drawing number 140/30,003.

Under the provisions of Section 8(c) of Public Law 106–530, and effective on November 22, 2000, the following transfers were made:

- Administrative jurisdiction of those lands depicted on the exhibit map as Zone A to the United States Fish and Wildlife Service for addition to and

Desert Harvest Solar Project

NOTICE OF PUBLIC SCOPING MEETINGS

enXco Development Corporation has proposed to develop a 150-megawatt solar photovoltaic energy project on approximately 1,200 acres of Bureau of Land Management (BLM)–administered land in Riverside County. The BLM is preparing an Environmental Impact Statement (EIS) and Land Use Plan Amendment pursuant to the National Environmental Policy Act (NEPA) and planning regulations promulgated under the Federal Land Policy and Management Act of 1976 (FLPMA).

Public scoping meetings are being held to solicit public input on the project and the EIS. These meetings are open to the public, and all interested parties are encouraged to attend.

Monday, October 3, 2011
1pm to 3pm
University of Riverside,
Palm Desert Graduate Center
75080 Frank Sinatra Drive
Palm Desert, CA 92211

Monday, October 3, 2011
6pm to 8pm
Lake Tamarisk Clubhouse
6251 Parkview Drive
Desert Center, CA 92239

Thursday, October 6, 2011
6pm to 8pm
Joshua Tree Community Center
6171 Sunburst Street
Joshua Tree, CA 92252

For more information, please contact:
Lynette Elser, NEPA Coordinator
BLM California Desert District
lelser@blm.gov
(951) 697-5233

Desert Harvest Solar Project

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BLM California Desert District
lelser@blm.gov
(951) 697-5233

Bureau of Land Management
c/o Aspen Environmental Group
235 Montgomery Street, Suite 935
San Francisco, CA 94104

Important Notice:
PUBLIC SCOPING MEETINGS
Desert Harvest Solar Project

Bureau of Land Management
c/o Aspen Environmental Group
235 Montgomery Street, Suite 935
San Francisco, CA 94104

Important Notice:
PUBLIC SCOPING MEETINGS
Desert Harvest Solar Project

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Bureau of Land Management

Public Scoping Meeting

Desert Harvest Solar Project EIS

Joshua Tree, CA – October 6, 2011

address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you may ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from individuals identifying themselves as representatives or officials of organizations or businesses will be made available for public inspection in their entirety.

SIGN-IN SHEET

Presentation starting promptly at 6:30 PM

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Public Scoping Meeting

Desert Harvest Solar Project EIS

Joshua Tree, CA – October 6, 2011

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Lake Tamarisk, CA – October 3, 2011

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Lake Tamarisk, CA – October 3, 2011

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Appendix C

Biological Resources Reports

Appendix C.1

2010 Focused Survey for Desert Tortoise (Gopherus agassizii)

amec

Desert Harvest

2010 Focused Survey for Desert Tortoise (*Gopherus agassizii*)

Riverside County, California
Township 4 South, Range 15 East, Sections 25, 26 & 27
USGS 7.5' *Victory Pass* & *East of Victory Pass* Quadrangles

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Desert Harvest

2010 Focused Survey for Desert Tortoise (*Gopherus agassizii*) Report

EXECUTIVE SUMMARY

A focused survey for the desert tortoise (*Gopherus agassizii*) was conducted by AMEC Earth & Environmental, Inc. (AMEC) between 12-17 April 2010 for the proposed Desert Harvest project (project), located in unincorporated eastern Riverside County, California. The 1,057-acre project site, which is located on lands administered by the Bureau of Land Management (BLM), is proposed to be the location of a 100-150 mega-watt photovoltaic panel solar power plant. This study, contracted to AMEC by Aspen Environmental Group (Aspen), presents the results of AMEC's field surveys on the proposed project site and in the site's zone of influence (ZOI). An additional 270-acre parcel was added to the project site, after completion of the 2010 desert tortoise survey. This focused survey report addresses only the larger eastern parcel; the southwestern 270-acre parcel area was not included in the scope of this study.

The project site is located within the Colorado Desert Recovery Unit as described in the Draft Revised Desert Tortoise Recovery Plan for the Mojave Population of the Desert Tortoise (*Gopherus agassizii*) (USFWS 2008) but not within designated critical habitat for the desert tortoise. The nearest designated critical habitat for the desert tortoise is the Chuckwalla Unit located approximately 1 mile southwest of the project site. A portion of the project site, the western-most 113.3 acres of the (currently unsurveyed) southwestern 270-acre parcel, however is within the Chuckwalla Desert Wildlife Management Area (DWMA) for the desert tortoise (USFWS 2008).

A literature search was conducted to identify special-status biological resources known from the vicinity of the project site. The focused survey for the desert tortoise was conducted in accordance with the currently accepted survey protocol "Preparing For Any Action That May Occur Within the Range of the Mojave Desert Tortoise" (USFWS 2010).

No live desert tortoises or recent sign were observed on the project site or within the ZOI. However, desert tortoises have the potential to occupy the site. Two desert tortoise burrows, designated as class 2 (good condition) and class 3 (deteriorated condition), were observed onsite. Neither burrow exhibited any evidence of recent use or corroborating sign. Several class 5 (disarticulated and scattered) bone fragments, possibly of tortoise origin, were also found within one area of the project site. A road-killed desert tortoise was observed at the Eagle Mountain off ramp on east-bound Interstate 10 (I-10) approximately 7.5 miles southwest of the site (see Figure 2).

The desert tortoise occurs onsite and in the vicinity, evident by the presence of the two burrows, the road-killed tortoise observed en-route to the site, and possibly the three small bone fragments. These results are consistent with what is already known about desert tortoise occurrence this region of the Colorado Desert: desert tortoises occur in relatively low numbers in this part of their geographic range. The US Fish and Wildlife Service (USFWS) desert tortoise survey guidelines consider the presence of any tortoise sign (scat, burrows, and carcasses) to indicate presence of desert tortoise (USFWS 2010).

Evidence of one other special-status wildlife species, the American badger (*Taxidea taxus*), was found onsite during the surveys, as well. The American badger is designated as a California Species of Special Concern (CSSC) by the California Department of Fish and Game (CDFG).

There is potential for a variety other special-status wildlife species to occur onsite and in the vicinity, based on CNDDB records, geographic range and presence of suitable habitat. These include burrowing owl (*Athene cunicularia*), prairie falcon (*Falco mexicanus*), Bendire's thrasher (*Toxostoma bendirei*), Le Conte's thrasher (*Toxostoma lecontei*), Nelson's bighorn sheep (*Ovis canadensis nelsoni*), and California leaf-nosed bat (*Macrotus californicus*). No further analysis of potential occurrence of these species or other biological resources is provided in this report. A separate, comprehensive biological assessment for this project, should address these species, along with other special-status resources (e.g., nesting birds protected by the Migratory Bird Treaty Act, jurisdictional waters of the California and United States).

Desert Harvest

2010 Focused Survey for Desert Tortoise (*Gopherus agassizii*) Report

1.0 INTRODUCTION

AMEC Earth & Environmental, Inc. (AMEC) was contracted by Aspen Environmental Group (Aspen) to conduct a focused survey for desert tortoise (*Gopherus agassizii*) in spring 2010 for the proposed Desert Harvest photovoltaic solar energy project (herein "project" or "action area") located in unincorporated Riverside County California. The proposed project consists of the development of a 100-150 mega-watt photovoltaic panel solar power plant. The objective of this study is to determine the presence or absence of the desert tortoise on, and within the zone of influence of, the project site.

The Mojave population of the desert tortoise, which includes tortoises occurring in California's Colorado Desert, is federally and state listed as threatened. Development projects proposed within the geographic range of desert tortoise require an assessment of site's habitat suitability and focused surveys, where suitable habitat is present, in order to determine the onsite status of the species. Impacts to desert tortoise require both federal and state permitting as well as incorporation of impact avoidance (where possible), minimization, and mitigation measures into project design.

2.0 PROJECT LOCATION& HABITAT DESCRIPTION

The Desert Harvest project site is located on public lands administered by the Bureau of Land Management (BLM) in unincorporated Riverside County, approximately 6 miles north of Desert Center, California (Township 4 South, Range 15 East, Sections 25, 26, 27, USGS 7.5' *Victory Pass* & *East of Victory Pass* quadrangles)(see Figure 1). The applicant, enXco Development Corporation (enXco) proposes to build a 100-150 mega-watt (MW) solar plant incorporating thin-film photovoltaic panels (enXco 2010). The serialized application number assigned by the BLM for this project is 049491. The Right of Way Application consists of two non-contiguous parcels (see Figures 2 and 3). The eastern parcel is 1,057 acres and the southwestern parcel is 270 acres. This report addresses the larger, eastern parcel only.

The project site is currently vacant, undeveloped, natural open space. Dominant vegetation communities occurring onsite include Creosote Bush-White Burr Sage Scrub and Smoke Tree Woodland (Sawyer et al. 2009). The Creosote Bush-White Burr Sage Scrub vegetation community is the equivalent to the "Sonoran Creosote Bush Scrub" and the Smoke Tree Woodland is the equivalent to the "Desert Dry Wash Woodland" described by Holland (1986).

The Creosote Bush-White Burr Sage Scrub vegetation community is the most widespread vegetation type in the Colorado Desert. This vegetation community is characterized by low shrub species diversity and the wide spacing of the shrubs, usually with bare ground between, and is comprised of the codominant species creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*). Other shrubs occurring in smaller numbers include cheesebush (*Ambrosia salsola*), brittlebush (*Encelia farinosa*), pencil cholla (*Cylindropuntia ramosissima*), beavertail cactus (*Opuntia basilaris*), California fagonia (*Fagonia laevis*), and sticky fagonia (*Fagonia pachyacantha*). Many species of seasonal annuals, including desert sunflower (*Geraea canescens*), desert dandelion (*Malacothrix glabrata*), and desert four-spot (*Eremalche rotundifolia*), were observed onsite. The Creosote Bush-White Burr Sage Scrub community also includes small patches of desert pavement with very sparse vegetative cover composed primarily of devil's spineflower (*Chorizanthe rigida*), kidneyleaf buckwheat (*Eriogonum reniforme*), and Emory's rock daisy (*Perityle emoryi*). Desert pavement are areas where the desert surfaces are covered with closely packed, interlocking rocks and pebbles, which serves as a barrier to many plants germinating and taking root.

The Smoke Tree Woodland occurs throughout the onsite dry washes and is dominated by ironwood (*Olneya tesota*) and smoketree (*Psorothamnus spinosus*), with blue palo verde (*Parkinsonia florida*), and cat claw acacia (*Acacia greggii*) occurring in lesser amounts. Smoke Tree Woodlands are characterized by the presence of arborescent, often spiny, shrubs generally associated with washes or alluvial deposits adjacent to washes. Plant species in desert wash habitats are generally taller, up to approximately 9m (30 ft) in height, and denser than those of surrounding desert habitats, such as the Creosote Bush-White Burr Sage Scrub on the project site, with the height of the wash vegetation proportional to the size of the arroyo (Mayer 1988). The Smoke Tree Woodland on the project site fits this description, with the ironwood, smoketree, and palo verde exceeding both the height and density of the surrounding Creosote Bush-White Burr Sage Scrub vegetation community, with many of the individual shrubs of the Smoke Tree Woodland located along the low, vertically-incised banks. This habitat supports a variety of wildlife species, essentially the same species as those occupying the Creosote Bush-White Burr Sage Scrub.

Ground surface visibility is greater than 80% (enXco 2010). Site topography is mostly flat with elevations ranging from 583 to 675 feet above mean sea level. Soils vary from sandy alluvium to hard packed desert pavement. Onsite ephemeral drainages flow southeasterly towards Desert Center at a slope of less that 1% (enXco 2010).

Surrounding land uses include undeveloped natural open space to the west, north and south. Some of the lands to the southeast of the site have been converted to agricultural uses in the past (jojoba [*Simmondsia chinensis*] farming) and appear to be presently abandoned.

The project site is located within the Colorado Desert Recovery Unit as described in the Draft Revised Desert Tortoise Recovery Plan for the Mojave Population of the Desert Tortoise (*Gopherus agassizii*), but not within designated critical habitat for the desert tortoise (USFWS 2008). The closest designated critical habitat, the Chuckwalla Unit, is located approximately 1 mile southwest of the project site. A portion of the project site, the western-most 113.3 acres of the (currently unsurveyed) southwestern 270-acre parcel, is within the Chuckwalla Desert Wildlife Management Area (DWMA) for the desert tortoise (USFWS 2008)(see Figure 3).

Desert tortoise density estimates for the 1994-designated Eastern Colorado Recovery Unit in which the site is located ranged from 10.80 tortoises per km^2 in 2001 to 6.38 tortoises per km^2 in 2005 (USFWS 2008).

3.0 METHODS

3.1 Field Survey

A literature search was conducted to identify special-status biological resources known from the vicinity of the project site. In the context of this report, and for the purpose of this assessment, vicinity is defined as areas within an approximate 10-mile radius of the site. The literature search included a review of the following documents:

- California Department of Fish and Game's (CDFG) California Natural Diversity Database (CNDDB) version 3.1.1 RAREFIND application (CDFG 2010)
- CNDDB's Special Animals List (CNDDB 2009)
- USGS 7.5' *Victory Pass, East of Victory Pass*, *Desert Center* and *Corn Spring* California quadrangles

The focused survey for the desert tortoise was conducted over 100% of the project site and within the project's buffer zone of Influence (ZOI) in accordance with the currently accepted survey protocol "Preparing for any Action that may Occur within the Range of the Mojave Desert Tortoise" (USFWS 2010) (see Table 1). Desert tortoise surveys were conducted on April 12 through 17, 2010 by biologists Jim Boone, PhD., Stephen Ferrand, William Ferrand, Alex Heindl, Nathan T. Moorhatch, Michael Omana, Dennis Strong and Michael D. Wilcox. AMEC botanist Shari Norton conducted an onsite focused survey for rare plant species concurrent with the focused desert tortoise surveys (see Table 1 below).

Belt transects, spaced 10 meters (m) apart, were systematically walked over the 1,057-acre project site. When observed, desert tortoise sign (i.e., live tortoises, tracks, burrows, scat, carcasses and bone fragments) was documented on appropriate survey forms (USFWS 2010 Desert Tortoise Pre-Project Survey Data Sheet). Desert tortoise sign observed was photographed with digital cameras and mapped using handheld GPS equipment. Where present, desert woodrat (*Neotoma lepida*) middens and animal burrows of various kinds (e.g., desert kit fox, coyote, badger, ground squirrel, kangaroo rat, burrowing owl, etc.) were carefully inspected for presence of desert tortoises and their sign. Parallel belt transects were also walked within the ZOI around the perimeter of the site (where access was granted) at intervals of 200, 400 and 600 m.

General weather conditions were recorded at the start and end of each survey. Temperatures and time of day were recorded at the start and end of each transect. Weather conditions during the surveys varied from gusty winds and light rain to sunny and calm (see Table 1). Temperatures ranged from 56-95 degrees Fahrenheit (F). All wildlife detected was recorded on field forms and/or notes and a list of all species observed is included in Appendix 3.

Table 1: Survey Conditions and Data.

Date	Start/End	Personnel	Temperatures (F)	Wind (mph)	Cloud cover (%)
12 Apr 10	0854-1705	JB, BF, SF, MO, DS, AH, NM, SN	56-77	3-15	~ 20-90, drizzle
13 Apr 10	0816-1557	JB, BF, SF, MO, DS, AH, NM, SN	58-80	0-7	0
14 Apr 10	0843-1435	JB, BF, SF, MO, DS, AH, NM, SN	67-87	0-7	0
15 Apr 10	0751-1532	JB, SF, MO, DS, AH, SN, MW	68-88	0-7	0
16 Apr 10	0850-1727	JB, BF, SF, MO, DS, AH, SN, MW	77-95	0-9	0
17 Apr 10	0712-1141	JB, BF, SF, MO, DS, AH,	68-88	3-10	0

Key to personnel: JB (Jim Boone), BF (Bill Ferrand), SF (Stephen Ferrand), MO (Michael Omana, DS (Dennis Strong), AH (Alex Heindl), NM (Nathan Moorhatch), SN (Shari Norton), MW (Michael Wilcox)

4.0 RESULTS

The CNDDB (2010) reports records of six special-status wildlife species in the vicinity of the project site. These include the desert tortoise, prairie falcon (*Falco mexicanus*), Bendire's thrasher (*Toxostoma bendirei*), Le Conte's thrasher (*Toxostoma lecontei*), Nelson's bighorn sheep (*Ovis canadensis nelsoni*), and California leaf-nosed bat (*Macrotus californicus*).

No live desert tortoises, active burrows, scat, tracks/prints, drinking depressions, courtship rings, or complete carcasses were observed on the project site or within the ZOI. Two desert tortoise burrows were found onsite. These included one class 2 and one class 3, definite desert tortoise burrows, in good condition but without evidence of recent use and degraded condition respectively (see Figure 2). Table 2 provides additional details regarding desert tortoise sign classifications. Three class 5 bone fragments, possibly of tortoise origin, were also found within one area and may have been washed onto the site from upstream. The carapace and plastron (upper and lower shell) of the tortoise's anatomy are made up of fused plates of bone with scutes (keratin layers) attached. These plates of bone and scutes typically exhibit characteristic sutures or lines where they are fused to the adjoining plates or scutes. The scutes also exhibit growth rings or annuli. The bone fragments found onsite did not exhibit obvious sutures or lines typical of tortoise carapace or plastron bone, but because of their shape and size, which are both consistent with tortoise bone, they are considered by AMEC to be potential tortoise remains (see Figure 2 and Photos 7-8). Due to their old age, highly weathered surfaces and edges, and the small size of the fragments, assigning them definitively to tortoise was not possible. No scutes were observed. Although considerably offsite, a road-killed desert tortoise was observed at the Eagle Mountain off ramp of east-bound Interstate 10 (I-10) approximately

7.5 miles southwest of the site (see Figure 2). The closest known record of desert tortoise was 3.6 miles north of the site (CNDDB 2010).

Table 2: Desert Tortoise Sign Key

Sign Type	Class 1	Class 2	Class 3	Class 4	Class 5
Burrow and Den	Currently active with tortoise or recent tortoise sign	Good condition, definitely tortoise but no evidence of recent use	Deteriorated condition but is definitely tortoise	Deteriorated condition, possibly tortoise (no other corroborating sign)	Good condition, possibly tortoise (no other corroborating sign)
Scat	Wet or moist but not from rain or dew or dried but with obvious odor	Dry, dark brown, has a glaze, and some odor	Dry, has no glaze or odor, is slightly bleached, is light brown, and plant fibers are tightly packed	Dry, has no glaze or odor, is somewhat bleached, is light brown to pale yellow, plant fibers are not tightly packed, and has a scaly appearance.	Dry, has no glaze or odor, is bleached, is white, and consists only of plant fibers
Carcasses, Shell Remains and bone fragments	Fresh or putrid	Fresh or putrid, is of normal color and the scutes adhere to the bone	Scutes are peeling from the bone	Shell bone is falling apart and the growth rings on the scutes are peeling	Disarticulated and scattered

Other wildlife detected included species common to the deserts of southern California (see Appendix 3). Representative reptiles included desert iguana (*Dipsosaurus dorsalis*), side-blotched lizard (*Uta stansburinana*), western whiptail (*Aspidoscelis tigris*), desert horned lizard (*Phrynosoma platyrhinos*), zebra-tailed lizard (*Callisaurus draconoides*), patch-nosed snake (*Salvadora hexalepis*) and sidewinder (*Crotalus cerastes*). Bird species observed included cactus wren (*Campylorhynchus brunneicapillus*), black-throated sparrow (*Amphispiza bilineata*), Gambel's quail (*Callipepla gambelii*) and lesser nighthawk (*Chordeiles acutipennis*). Mammals detected included kangaroo rat (*Dipodomys* sp.), desert kit fox (*Vulpes macrotis arsipus*) and coyote (*Canis latrans*). The mammals were primarily identified indirectly, by burrows, bones, scat and prints/tracks. Desert kit fox colonies and kangaroo rat burrows were abundant throughout the site. Desert kit fox is not listed as a special-status species by CDFG or BLM, but it is protected under Title 14, California Code of Regulations (Title 14, Section 460) from trapping and hunting. Several species of kangaroo rat may occur in the area, but none are rare or are listed as a special-status species by CDFG or BLM. They cannot be identified to species from the burrow characteristics observed in the field.

5.0 OTHER SPECIAL-STATUS SPECIES OBSERVED

One other special-status wildlife species, the American badger (*Taxidea taxus*) was detected onsite during the surveys. Three burrows belonging to the badger, evident by the length of the excavated tailings (which is testament to their digging power) were observed and mapped (see Figure 2 and Photo 11). The badger burrows did not exhibit any recent sign of use (no scat, tracks or fresh tailings). The American badger is designated as a California Species of Special Concern (CSSC) by the CDFG.

6.0 CONCLUSIONS

The focused surveys detected no live tortoises or sign of recent tortoise occupation onsite. However, desert tortoise occurs in the vicinity, evident by the desert tortoise burrows, the three small bone fragments, and the road-killed desert tortoise observed en-route to the site. Desert tortoises should be expected to occur on the project site in low densities. These results are consistent with what is already known about desert tortoise occurrence this region of the Colorado Desert: desert tortoises occur in relatively low numbers in this part of their geographic range.

Three burrows belonging to the American badger were also observed onsite. The American badger is designated a CSSC by the CDFG. We conclude that American badger is present onsite.

Although not observed, there is potential for a variety other special-status wildlife species to occur onsite based on CNDDB records, geographic range and presence of suitable habitat. These include burrowing owl (*Athene cunicularia*), prairie falcon, Bendire's thrasher, Le Conte's thrasher, Nelson's bighorn sheep, and California leaf-nosed bat. These species and other special-status resources (e.g., nesting birds protected by the Migratory Bird Treaty Act; and state-jurisdictional streambeds or federally-jurisdictional waters of the United States) should be addressed in a separate comprehensive biological technical report for the project, and are not included within the scope of this focused desert tortoise survey report.

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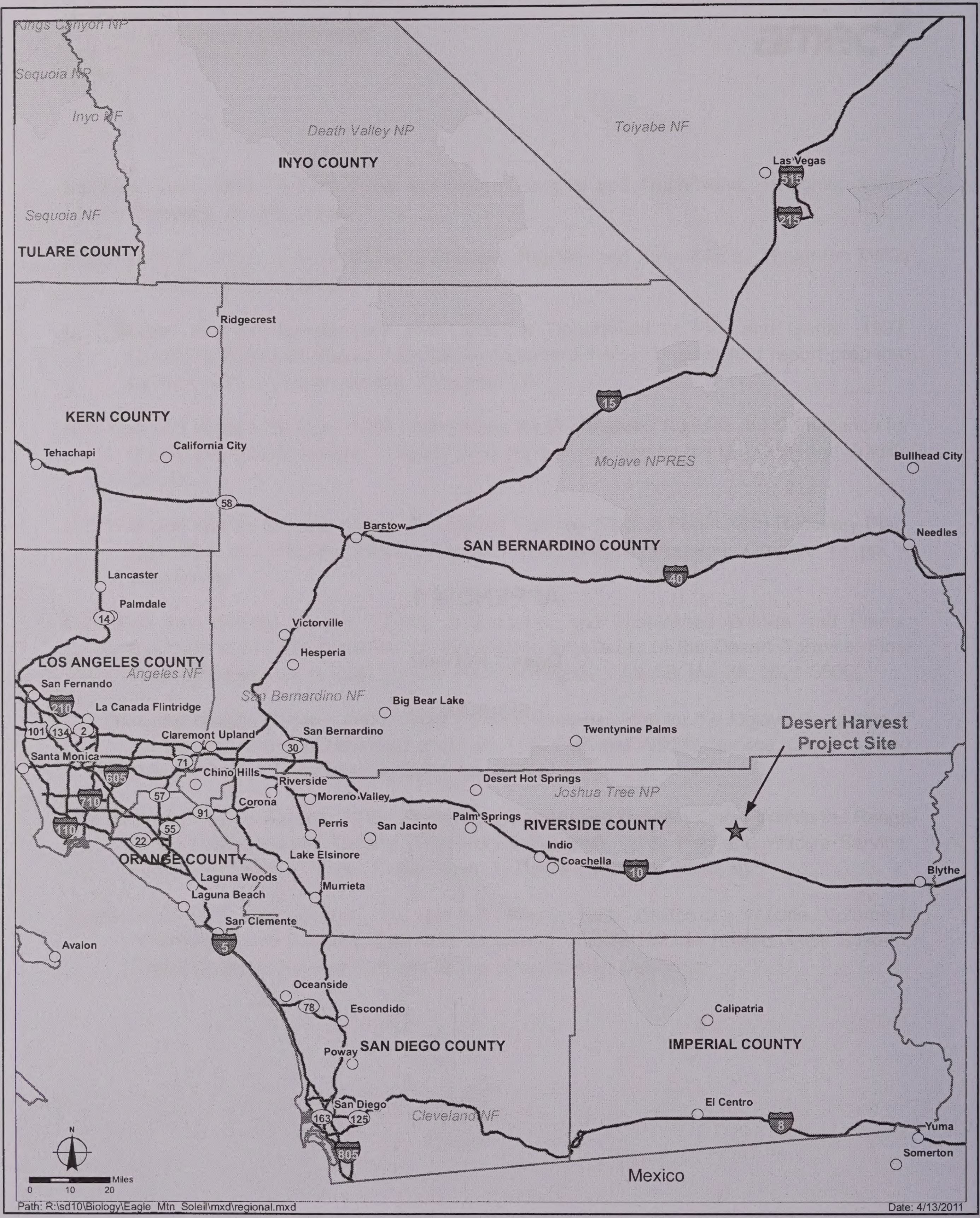
APPENDIX 1

Desert Harvest

FIGURES



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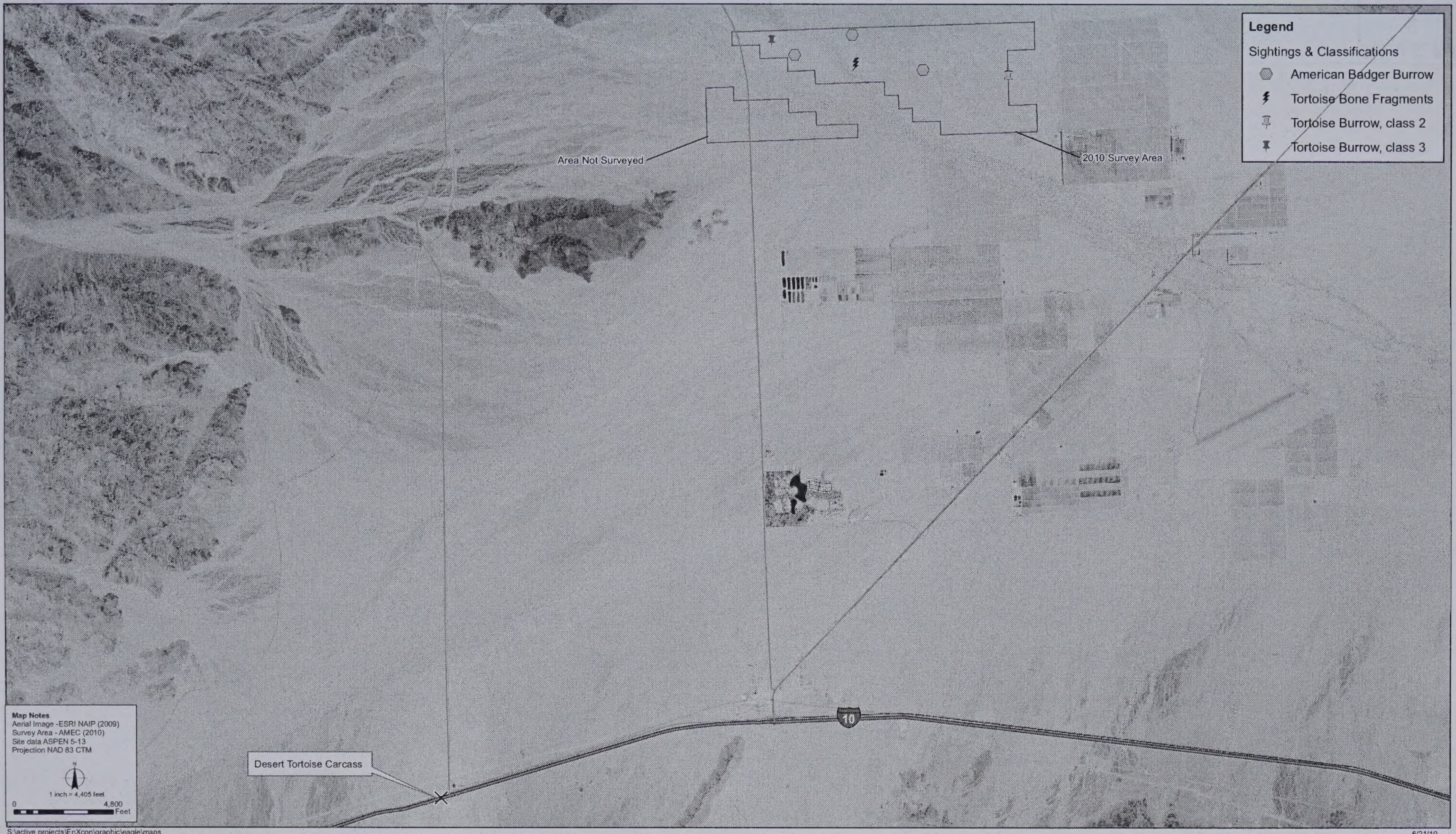
Date: 4/13/2011

FIGURE

1

Regional Location
Desert Harvest Project



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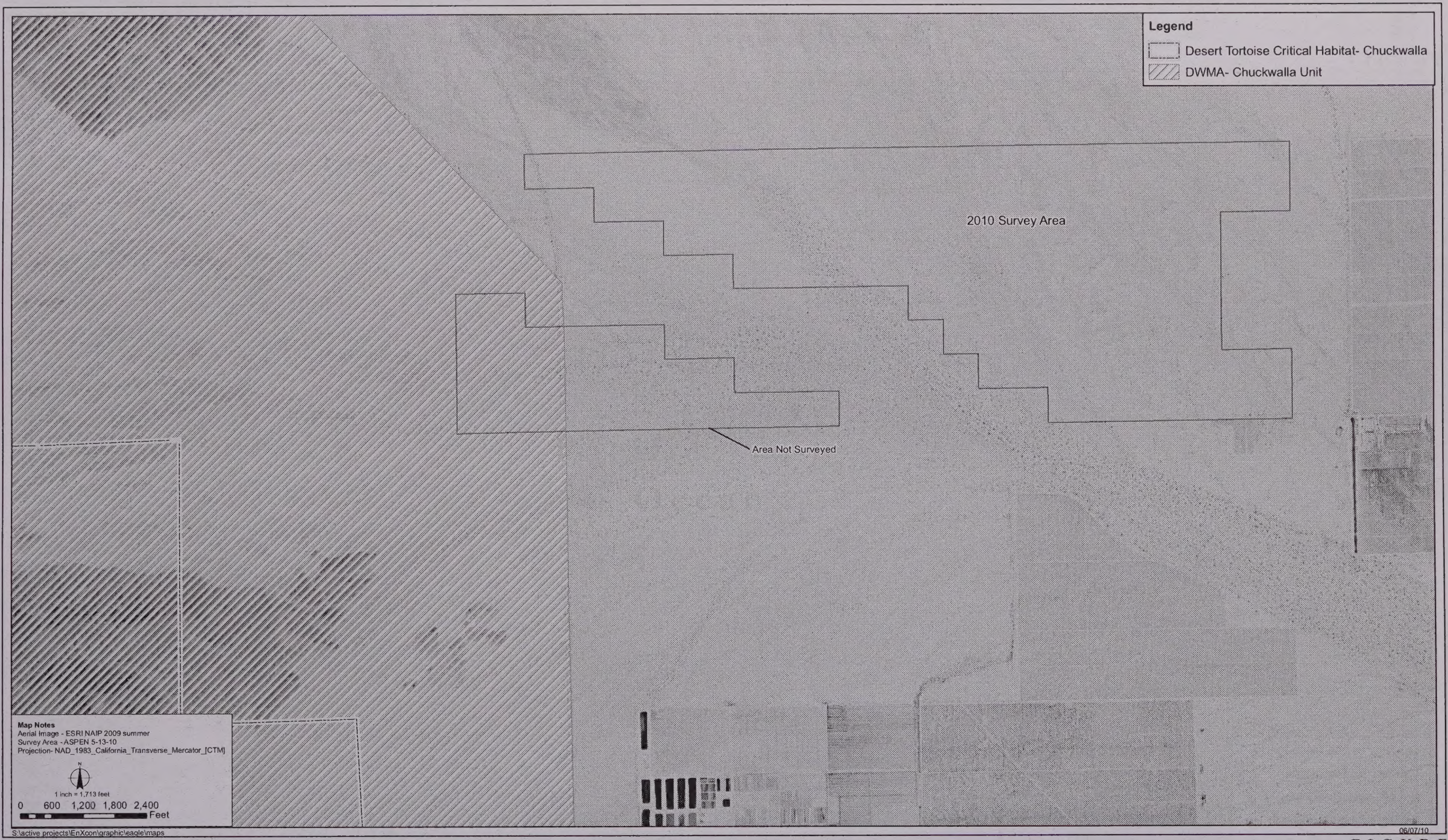
6/21/10

Survey Results
Desert Harvest Project

FIGURE

2


Legend
▭ Desert Tortoise Critical Habitat- Chuckwalla
▨ DWMA- Chuckwalla Unit
2010 Survey Area
Area Not Surveyed
Map Notes
Aerial Image - ESRI NAIP 2009 summer
Survey Area - ASPEN 5-13-10
Projection- NAD_1983_California_Transverse_Mercator_[CTM]
N
1 inch = 1,713 feet
0 600 1,200 1,800 2,400
Feet
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06/07/10

amec

Desert Tortoise Critical Habitat & Desert Wildlife Managment Area\
Desert Harvest Project

FIGURE
3

APPENDIX 2

Desert Harvest

REPRESENTATIVE SITE PHOTOS

Desert Harvest Project

Photo 1. Representative example of Creosote Bush-White Burr Sage Scrub vegetation community during the focused desert tortoise and concurrent rare plant surveys.

Photo 2. Biologists walking transects during the focused desert tortoise and concurrent rare plant surveys.

Photo 3. Representative example of Smoke Tree Woodland vegetation community during the focused desert tortoise and concurrent rare plant surveys.

Photo 4. Representative example of Smoke Tree Woodland vegetation community during the focused desert tortoise and concurrent rare plant surveys.

Photo 5. Representative example of sparsely-vegetated desert pavement soils during the focused desert tortoise and concurrent rare plant surveys.

Photo 6. Biologists recording data at the end of their transects during the focused desert tortoise and concurrent rare plant surveys.

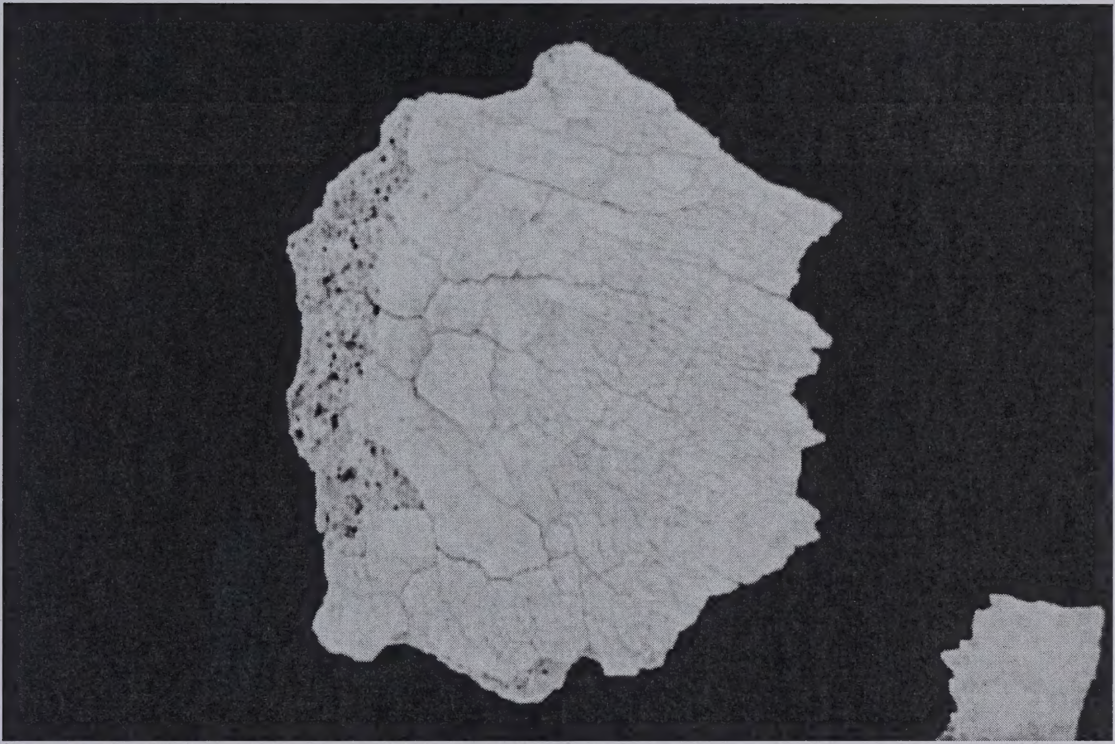

Photo 7. Possible desert tortoise (class 5) bone fragment.

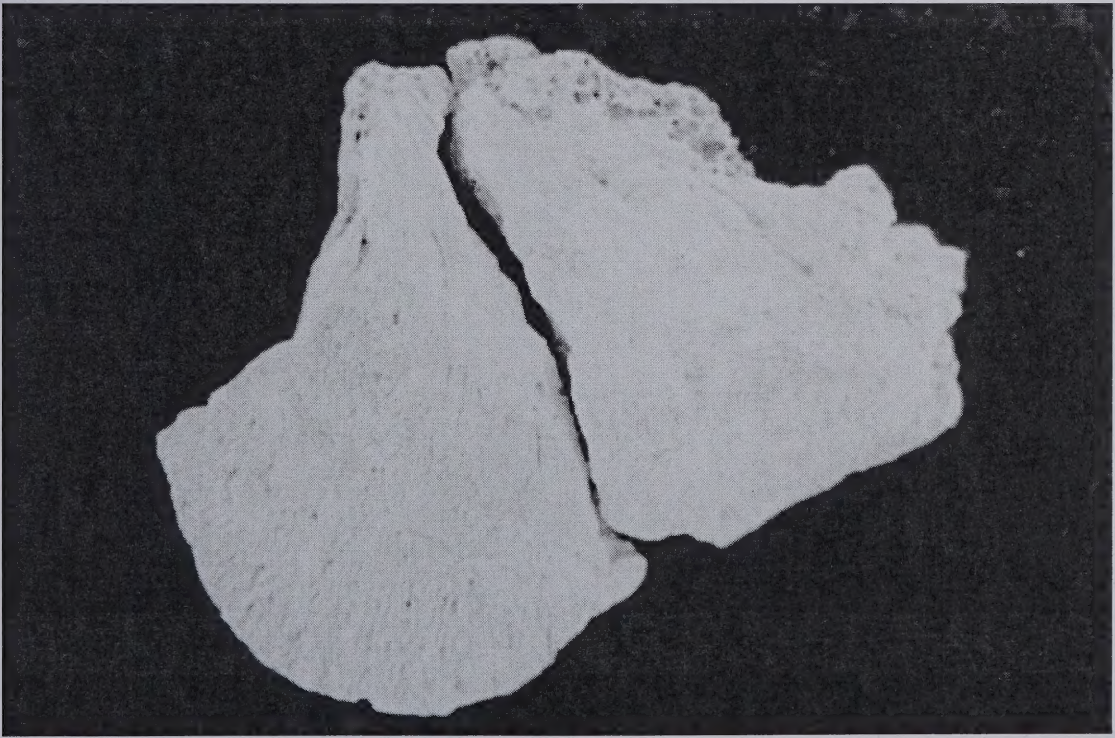

Photo 8. Possible desert tortoise (class 5) bone fragment.

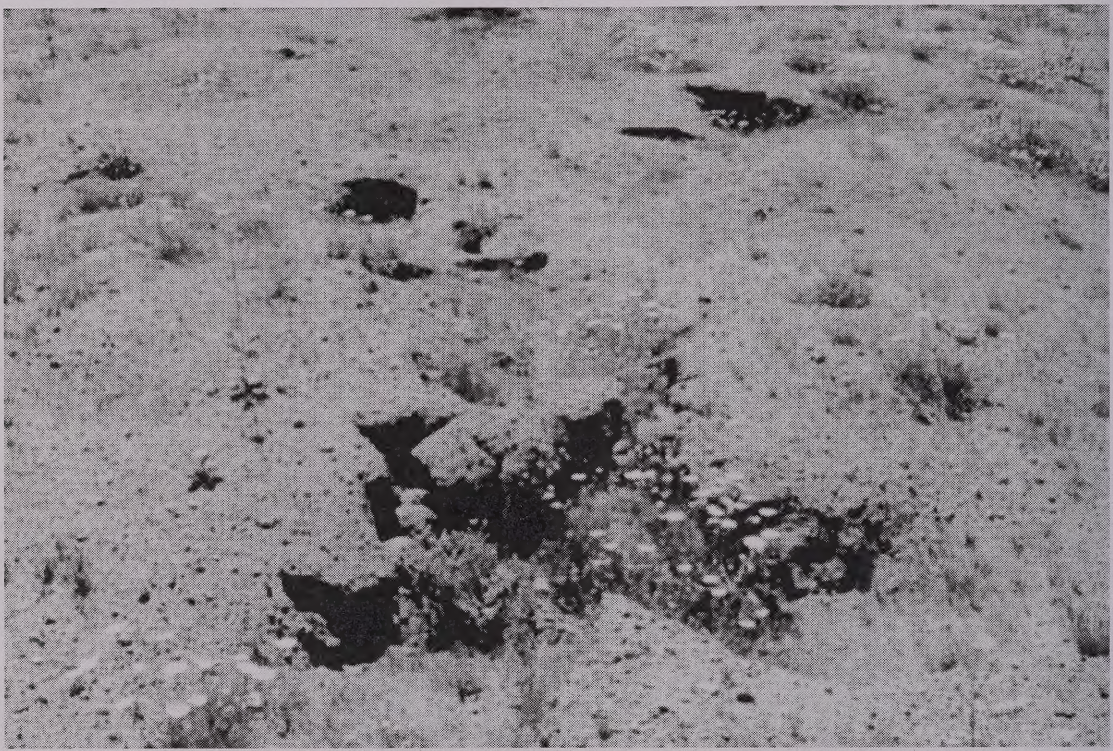

Photo 9. Representative example of kit fox colony with multiple burrow entrances.

Photo 10. Representative onsite American badger burrow.

APPENDIX 3

Desert Harvest

OBSERVED FAUNA SPECIES LIST

APPENDIX 3

Wildlife Observed on Desert Harvest

This list reports only plants and animals observed on or immediately adjacent to the site while conducting focused desert tortoise and rare plant surveys for this project. Other species may have been overlooked or undetectable due to their activity season.

Nomenclature and taxonomy for fauna observed on site follows Stebbins (1985) and Collins (1990) for herpetofauna, American Ornithologists' Union Checklist (1983 and supplements) for avifauna, and Laudenslayer *et al.* (1991) for mammals.

HERPETOFAUNA	**REPTILES & AMPHIBIANS**
TESTUDINES	**TURTLES**
Testudinidae	**Land Tortoises**
***Gopherus agassizii*	desert tortoise (burrows, bone fragments)
SQUAMATA	**LIZARDS & SNAKES**
Crotaphytidae	**Collared and Leopard Lizards**
Gambelia wislizenii	long-nosed leopard lizard
Iguanidae	**Iguanids**
Dipsosaurus dorsalis	desert iguana
Phrynosomatidae	**Spiny Lizards & Relatives**
Callisaurus draconoides	zebra-tailed lizard
Phrynosoma platyrhinos	desert horned lizard
Sceloporus magister	desert spiny lizard
Urosaurus graciosus	long-tailed brush lizard
Uta stansburiana	side-blotched lizard
Teiidae	**Whiptails & Racerunners**
Aspidoscelis tigris	Western whiptail
Colubridae	**Colubrids**
Salvadora hexalepis	patch-nosed snake
Viperidae	**Vipers**
Crotalus cerastes	sidewinder
AVIFAUNA	**BIRDS**
Odontophoridae	**New World Quail**
Callipepla gambelii	Gambel's quail
Cathartidae	**Vultures**
Cathartes aura	turkey vulture

Columbidae	**Pigeons and Doves**
Zenaida macroura	mourning dove
Caprimulgidae	**Goatsuckers**
Chordeiles acutipennis	lesser nighthawk
Apodidae	**Swifts**
Chaetura vauxi	Vaux's swift
Corvidae	**Jays, Magpies, and Crows**
Corvus corax	common raven
Alaudidae	**Larks**
Eremophila alpestris	horned lark
Hirundinidae	**Swallows**
Hirundo rustica	barn swallow
Petrochelidon pyrrhonota	cliff swallow
Remizidae	**Verdin**
Auriparus flaviceps	verdin
Troglodytidae	**Wrens**
Campylorhynchus brunneicapillus	cactus wren
Thraupidae	**Tanagers**
Piranga ludoviciana	western tanager
Emberizidae	**Emberizines**
Amphispiza bilineata	black-throated sparrow
Chondestes grammacus	lark sparrow
Spizella breweri	Brewer's sparrow
MAMMALIA	**MAMMALS**
Leporidae	**Rabbits and Hares**
Lepus californicus	black-tailed jackrabbit
Sciuridae	**Squirrels**
Spermophilus tereticaudus	round-tailed ground squirrel
Heteromyidae	**Hereromyid Rodents**
Dipodomys sp.	kangaroo rat (burrows)
Muridae	**Rats, Mice, and Voles**
Neotoma lepida	desert woodrat (middens)
Mustelidae	**Weasels & Relatives**
***Taxidea taxus*	American badger (burrows)
Canidae	**Foxes, Wolves, Coyotes**
Canis latrans	coyote (burrows, scat, prints/tracks)
Vulpes macrotis arsipus	desert kit fox (bones, burrows, colonies, scat, prints/tracks)

** Special-status species

Appendix C.2

2011 Focused Survey for Desert Tortoise (Gopherus agassizii) on Southwestern Portion of ROW Application

Desert Harvest

2011 Focused Survey for Desert Tortoise (*Gopherus agassizii*) on Southwestern Portion of ROW Application

Riverside County, California
Township 4 South, Range 15 East, Sections 26 & 27
USGS 7.5' *Victory Pass* Quadrangle

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AMEC Job # 1155400460

Report Date: 16 September 2011

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Desert Harvest

2011 Focused Survey for Desert Tortoise (*Gopherus agassizii*) on Southwestern Portion of ROW Application

EXECUTIVE SUMMARY

A focused survey for the desert tortoise (*Gopherus agassizii*) was conducted by AMEC Earth & Environmental, Inc. (AMEC) between 26-28 May 2011 on a portion of the proposed Desert Harvest project (project), located in unincorporated eastern Riverside County, California. The 270-acre survey area is located near and southwest of, but is not contiguous to a larger 1,057-acre portion of the project site, which was surveyed by AMEC for desert tortoise and rare plants in 2010. Both sites are located on lands administered by the Bureau of Land Management (BLM) and are proposed to be the location of a 100-150 mega-watt photovoltaic panel solar power plant. This study, contracted to AMEC by Aspen Environmental Group (Aspen), presents the results of the field surveys for the 270-acre site and in this site's zone of influence (ZOI).

The project site is located within the Colorado Desert Recovery Unit as described in the Draft Revised Desert Tortoise Recovery Plan for the Mojave Population of the Desert Tortoise (*Gopherus agassizii*) (United States Fish and Wildlife Service [USFWS] 2008) but not within designated critical habitat for the desert tortoise. The nearest designated critical habitat for the desert tortoise is the Chuckwalla Unit located approximately 1 mile southwest of the project site. The western-most 113 acres of the 270-acre site (i.e., the area west of Kaiser Road), however is within the Chuckwalla Desert Wildlife Management Area (DWMA) for the desert tortoise (USFWS 2008).

A literature search was conducted to identify special-status biological resources known from the vicinity of the project site. The focused survey for the desert tortoise was conducted in accordance with the currently accepted survey protocol (USFWS 2010).

No live desert tortoises or any definitive sign of desert tortoise were observed on the project site or within the ZOI. Eight possible desert tortoise burrows, designated as class 5 (possibly tortoise, good condition), were observed onsite. One additional class 5, possible desert tortoise burrow, was also observed offsite, within the zone of influence. None of these burrows exhibited any evidence of recent use or corroborating sign. No live desert tortoises, active or definitive desert tortoise burrows, scat, tracks/prints, drinking depressions, courtship rings, carcasses or fragments of carcasses were observed on the project site or within the ZOI.

Although not observed onsite, the desert tortoise occurs in the vicinity, evident by the presence of two definite tortoise burrows and three small, possible tortoise bone fragments observed in 2010 on the 1,057-acre site, approximately 0.5 mile northeast of the 270-acre subject site and a road-killed tortoise observed in 2010 near the Eagle Mountain off ramp on east-bound Interstate 10 (I-10) approximately 6.5 miles southwest of the site. These results are consistent with what is already known about desert tortoise occurrence this region of the Colorado Desert: desert tortoises occur in relatively low numbers in this part of their geographic range. The

USFWS desert tortoise survey guidelines consider the presence of any tortoise sign (scat, burrows, and carcasses) to indicate presence of desert tortoise (USFWS 2010).

Emory's crucifixion thorn (*Castela emoryi*), a California Native Plant Species (CNPS) List 2.3 species, were incidentally observed throughout the site (see Photos 3 & 4 in Appendix 2).

Although no live tortoises or definitive sign thereof were observed onsite, there is a possibility that desert tortoise could occur onsite at any time in the future. This conclusion is based on CNDDB records for the desert tortoise in the vicinity, the tortoise sign found on the 1,057-acre Desert Harvest site and the road-killed desert tortoise observed near the Eagle Mountain off ramp of the east-bound Interstate 10 in 2010.

Based on CNDDB records, a variety other special-status wildlife species may have potential to occur onsite and in the vicinity. These include burrowing owl (*Athene cunicularia*), prairie falcon (*Falco mexicanus*), Bendire's thrasher (*Toxostoma bendirei*), Le Conte's thrasher (*Toxostoma lecontei*), Nelson's bighorn sheep (*Ovis canadensis nelsoni*), pallid bat (*Antrozous pallidus*), western mastiff bat (*Eumops perotis californicus*), and California leaf-nosed bat (*Macrotus californicus*). No further analysis of potential occurrence of these species or other biological resources is provided in this report. A separate, comprehensive biological technical report prepared for this project, should address these species, along with other special-status resources (e.g., rare plants, nesting birds protected by the Migratory Bird Treaty Act, and jurisdictional waters of the California and United States).

Desert Harvest

2011 Focused Survey for Desert Tortoise (*Gopherus agassizii*) on Southwestern Portion of ROW Application

1.0 INTRODUCTION

AMEC Earth & Environmental, Inc. (AMEC) was contracted by Aspen Environmental Group (Aspen) to conduct a focused survey for desert tortoise (*Gopherus agassizii*) in spring 2011 on a 270-acre portion of the proposed Desert Harvest photovoltaic solar energy project site (herein "project" or "site") located in unincorporated Riverside County California. The proposed project consists of the development of a 100-150 mega-watt photovoltaic panel solar power plant. The objective of this study is to determine the presence or absence of the desert tortoise on, and within the zone of influence of, the 270-acre portion of the site.

The Mojave population of the desert tortoise, which includes tortoises occurring in California's Colorado Desert, is federally and state listed as threatened. Development projects proposed within the geographic range of desert tortoise require an assessment of site's habitat suitability and focused surveys, where suitable habitat is present, in order to determine the onsite status of the species. Impacts to desert tortoise require both federal and state permitting as well as incorporation of impact avoidance (where possible), minimization, and mitigation measures into project design.

2.0 PROJECT LOCATION & HABITAT DESCRIPTION

The Desert Harvest project site is located on public lands administered by the Bureau of Land Management (BLM) in unincorporated Riverside County, approximately 6 miles north of Desert Center, California (Township 4 South, Range 15 East, Sections 26 & 27, USGS 7.5' *Victory Pass* quadrangle) (see Figure 1). The site consists of two noncontiguous parcels, the 270-acre southeastern portion, which is the subject of this study and a northeastern 1,057-acre portion which was surveyed by AMEC for the desert tortoise and rare plants in 2010. The applicant, enXco Development Corporation (enXco) proposes to build a 100-150 mega-watt (MW) solar plant incorporating thin-film photovoltaic panels (enXco 2010). The serialized application number assigned by the BLM for this project is 049491.

The project site is currently vacant, undeveloped, natural open space. Dominant vegetation communities occurring onsite most closely match the creosote bush-white burr sage scrub (*Larrea tridentata – Ambrosia dumosa* shrubland alliance) and blue palo verde–ironwood woodland (*Parkinsonia florida – Olneya tesota* woodland alliance) as described by Sawyer et al. (2009). The creosote bush-white burr sage series is included within the "Sonoran creosote bush scrub" and blue palo verde–ironwood alliance is included within the "desert dry wash woodland" described by Holland (1986).

The creosote bush-white burr sage series is the most widespread vegetation type in the Colorado Desert. This vegetation is characterized by low shrub species diversity and the wide spacing of the shrubs, usually with bare ground between, and is comprised of the codominant species creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*).

The blue palo verde–ironwood woodland occurs throughout the onsite dry washes and is dominated by ironwood (*Olneya tesota*) with lesser amounts of blue palo verde (*Parkinsonia florida*). This vegetation is characterized by the presence of arborescent, often spiny, shrubby trees generally associated with washes or alluvial deposits adjacent to washes. In general, plant species in desert wash habitats are taller, up to approximately 9m (30 ft) in height, and the washes are more densely vegetated than surrounding plant communities, such as the creosote bush-white burr sage series on the project site, with the height of the wash vegetation proportional to the size of the arroyo (Mayer and Laudenslayer 1988). The blue palo verde–ironwood woodland on the project site fits this description, with the ironwood and palo verde exceeding both the height and density of the surrounding creosote bush-white burr sage series and with many of the individual shrubs of this community located along the low, braided and vertically-incised banks of the onsite dry washes. This habitat supports a variety of wildlife species, essentially the same species as those occupying the creosote bush-white burr sage scrub.

Stands of Emory's crucifixion thorn (*Castela emoryi*), which consisted of up to nine individual plants sparsely distributed over a relatively small area, were also noted intermittently throughout the site (see Photos 3 & 4 in Appendix 2). Emory's crucifixion thorn is a California Native Plant Species (CNPS) List 2.3 species.

Ground surface visibility is greater than 80% (enXco 2010). Site topography is mostly flat with elevations ranging from 583 to 675 feet above mean sea level. Soils vary from sandy alluvium to hard packed desert pavement. Onsite ephemeral drainages flow southeasterly towards Desert Center at a slope of less that 1% (enXco 2010).

Surrounding land uses include undeveloped natural open space to the west, north and south. Some of the lands to the southeast of the site have been converted to agricultural uses in the past (jojoba [*Simmondsia chinensis*] farming) and appear to be presently abandoned.

The project site is located within the Colorado Desert Recovery Unit as described in the Draft Revised Desert Tortoise Recovery Plan for the Mojave Population of the Desert Tortoise (*Gopherus agassizii*), but not within designated critical habitat for the desert tortoise (USFWS 2008). The closest designated critical habitat, the Chuckwalla Unit, is located approximately 1 mile southwest of the project site. A portion of the project site, the approximate western-most 113.3 acres of the 270-acre site, is within the Chuckwalla Desert Wildlife Management Area (DWMA) for the desert tortoise (USFWS 2008) (see Figure 3).

Desert tortoise density estimates for the 1994-designated Eastern Colorado Recovery Unit in which the site is located ranged from 10.80 tortoises per km^2 in 2001 to 6.38 tortoises per km^2 in 2005 (USFWS 2008).

3.0 METHODS

3.1 Field Survey

A literature search was conducted to identify desert tortoise and other special-status biological resources known from the vicinity of the project site. In the context of this report, and for the purpose of this assessment, vicinity is defined as areas within an approximate 10-mile radius of the site. The literature search included a review of the following documents:

- CNDDB's Special Animals List (CDFG 2011a)
- California Department of Fish and Game's (CDFG) California Natural Diversity Database (CNDDB) version 3.1.1 RAREFIND application (CDFG 2011b)
- USGS 7.5' *Victory Pass, East of Victory Pass*, *Desert Center* and *Corn Spring* California quadrangles

The focused survey for the desert tortoise was conducted over 100% of the 270-acre site and within the buffer zone of Influence (ZOI) in accordance with the currently accepted survey protocol (USFWS 2010). Desert tortoise surveys were conducted on 26-28 May 2011 by AMEC biologists Matt Amalong, Tsegaye Mengistu, Nathan T. Moorhatch and Michael D. Wilcox and AMEC subconsultant Ted Rado (see Table 1 below).

Table 1: Survey Conditions and Data.

Date	Start/End	Personnel	Temperatures (F)	Wind (mph)	Cloud cover (%)
26 May 11	0815-1430	MA, TM, NM, TR, MW	77-100	0-10	0
27 May 11	0745-1542	MA, TM, NM, TR, MW	74-103	0-5	0
28 May 11	0609-1113	TM, TR	76-93	0-5	0

Key to personnel: MA (Matt Amalong), TM (Tsegaye Megistu), NM (Nathan Moorhatch), TR (Ted Rado) and MW (Michael Wilcox)

Belt transects, spaced 10 meters (m) apart, were systematically walked over the 270-acre project site. When observed, potential desert tortoise sign (i.e., burrows) was documented on appropriate survey forms (USFWS 2010). Potential desert tortoise sign observed was photographed with digital cameras and mapped using handheld GPS equipment. Where present, desert woodrat (*Neotoma lepida*) middens and animal burrows of various kinds (e.g., desert kit fox, coyote, badger, ground squirrel, kangaroo rat, burrowing owl, etc.) were carefully inspected for presence of desert tortoises and their sign. Parallel belt transects were also walked within the ZOI around the perimeter of the site at intervals of 200, 400 and 600 m.

General weather conditions were recorded at the start and end of each survey. Temperatures and time of day were recorded at the start and end of each transect. Weather conditions during the surveys consisted of clear skies with calm to slightly gusty winds (see Table 1 above).

Temperatures ranged from 74-103 degrees Fahrenheit (F). All wildlife detected was recorded on field forms and/or notes and a list of all species observed is included in Appendix 4.

4.0 RESULTS

The CNDDB (2011) reports records of nine special-status wildlife species in the vicinity of the project site. These include desert tortoise, burrowing owl (*Athene cunicularia*), prairie falcon (*Falco mexicanus*), Bendire's thrasher (*Toxostoma bendirei*), Le Conte's thrasher (*Toxostoma lecontei*), Nelson's bighorn sheep (*Ovis canadensis nelsoni*), pallid bat (*Antrozous pallidus*), western mastiff bat (*Eumops perotis californicus*), and California leaf-nosed bat (*Macrotus californicus*). No further analysis of potential occurrence of these species or other biological resources is provided in this report. A separate, comprehensive biological technical report for this project, should address these species, along with other special-status resources (e.g., nesting birds protected by the Migratory Bird Treaty Act, jurisdictional waters of the California and United States).

No live desert tortoises, active or definitive desert tortoise burrows, scat, tracks/prints, drinking depressions, courtship rings, carcasses or fragments of carcasses were observed on the project site or within the ZOI. Eight class 5 potential desert tortoise burrows were found onsite and one class 5 potential desert tortoise burrow was found offsite within the ZOI (See Figure 2 in Appendix 1). Class 5 burrows are those that are in good condition, considered to be of possible tortoise origin but lack any other associated sign such as scat, tracks, carcasses or bone fragments, etc. (see Photos 5 & 6 in Appendix 2). Table 2 on the following page provides additional details regarding desert tortoise sign classifications. In 2010, one class 2 (definite desert tortoise burrow, in good condition) and one class 3 (definite desert tortoise burrow, in degraded condition) were observed within approximately 0.5 mile northeast on the nearby 1,057-acre portion of the project site (AMEC 2010). Additionally, a road-killed desert tortoise was observed at the Eagle Mountain off ramp of east-bound Interstate 10 (I-10) approximately 6.5 miles southwest of the site in 2010 (AMEC 2010). The closest known record of a live desert tortoise is 3.6 miles north of the site (CNDDB 2011).

Other wildlife detected included species common to the deserts of southern California (see Appendix 3). Reptiles detected included desert iguana (*Dipsosaurus dorsalis*), side-blotched lizard (*Uta stansburinana*), western whiptail (*Aspidoscelis tigris*), zebratail lizard (*Callisaurus draconoides*) and shovelnose snake (*Chinoactis occipitalis*). Bird species observed included turkey vulture (*Cathartes aura*), white-winged dove (*Zenaida asiatica*), mourning dove (*Zenaida macroura*), lesser nighthawk (*Chordeiles acutipennis*), black-tailed gnatcatcher (*Polioptila melanura*), ladder-backed woodpecker (*Picoides scalaris*), ash-throated flycatcher (*Myiarchus cinerascens*), common raven (*Corvus corax*), verdin (*Auriparus flaviceps*) and black-throated sparrow (*Amphispiza bilineata*). Mammals detected included round-tailed ground squirrel (*Spermophilus tereticaudus*), desert woodrat (*Neotoma lepida*), black-tailed jackrabbit (*Lepus californicus*), kangaroo rat (*Dipodomys* sp.) and desert kit fox (*Vulpes macrotis arsipus*). Some of the mammals detected were identified indirectly by burrows, middens, bones, scat and/or prints/tracks.

Table 2: Desert Tortoise Sign Key

Sign Type	Class 1	Class 2	Class 3	Class 4	Class 5
Burrow and Den	Currently active with tortoise or recent tortoise sign	Good condition, definitely tortoise but no evidence of recent use	Deteriorated condition but is definitely tortoise	Deteriorated condition, possibly tortoise (no other corroborating sign)	Good condition, possibly tortoise (no other corroborating sign)
Scat	Wet or moist but not from rain or dew or dried but with obvious odor	Dry, dark brown, has a glaze, and some odor	Dry, has no glaze or odor, is slightly bleached, is light brown, and plant fibers are tightly packed	Dry, has no glaze or odor, is somewhat bleached, is light brown to pale yellow, plant fibers are not tightly packed, and has a scaly appearance.	Dry, has no glaze or odor, is bleached, is white, and consists only of plant fibers
Carcasses, Shell Remains and bone fragments	Fresh or putrid	Fresh or putrid, is of normal color and the scutes adhere to the bone	Scutes are peeling from the bone	Shell bone is falling apart and the growth rings on the scutes are peeling	Disarticulated and scattered

Desert kit fox colonies and kangaroo rat burrows were abundant throughout the site. Desert kit fox is not listed as a special-status species by CDFG or BLM, but it is protected under Title 14, California Code of Regulations (Title 14, Section 460) from trapping and hunting. Several species of kangaroo rat may occur in the area, but none are rare or are listed as a special-status species by CDFG or BLM. They cannot be identified to species from the burrow characteristics observed in the field.

5.0 CONCLUSIONS

The focused surveys detected no definitive sign of desert tortoise onsite or within the ZOI. No live tortoises, definite tortoise burrows, scat, carcasses, bone fragments, drinking depressions or courtship rings were observed. A total of nine class 5 burrows considered to be possible desert tortoise were detected. These burrows were of the appropriate shape and size, but no other corroborating desert tortoise sign was found. For this reason, these burrows can only be considered to be of possible tortoise origin. The desert tortoise is, however, known to occur in the vicinity, evident by definite desert tortoise burrows and several small bone fragments found on the 1,057-acre Desert Harvest site, and a road-killed desert tortoise observed near the Eagle Mountain off ramp of the east-bound Interstate 10 in 2010. Therefore, despite lack of definitive tortoise sign, there is still potential for desert tortoise to occur on the project site in low densities at any time in the future. These results are consistent with what is already known about desert tortoise occurrence this region of the Colorado Desert: desert tortoises occur in relatively low numbers in this part of their geographic range.

Although not observed, there is potential for a variety of other special-status wildlife species to occur onsite based on CNDDB records, geographic range and presence of suitable habitat. These include burrowing owl (*Athene cunicularia*), prairie falcon (*Falco mexicanus*), Bendire's thrasher (*Toxostoma bendirei*), Le Conte's thrasher (*Toxostoma lecontei*), Nelson's bighorn sheep (*Ovis canadensis nelsoni*), pallid bat (*Antrozous pallidus*), western mastiff bat (*Eumops perotis californicus*), and California leaf-nosed bat (*Macrotus californicus*). These species and other special-status resources (e.g., nesting birds protected by the Migratory Bird Treaty Act; and state-jurisdictional streambeds or federally-jurisdictional waters of the United States) should be addressed in a separate comprehensive biological technical report for the project, and are not included within the scope of this focused desert tortoise survey report.

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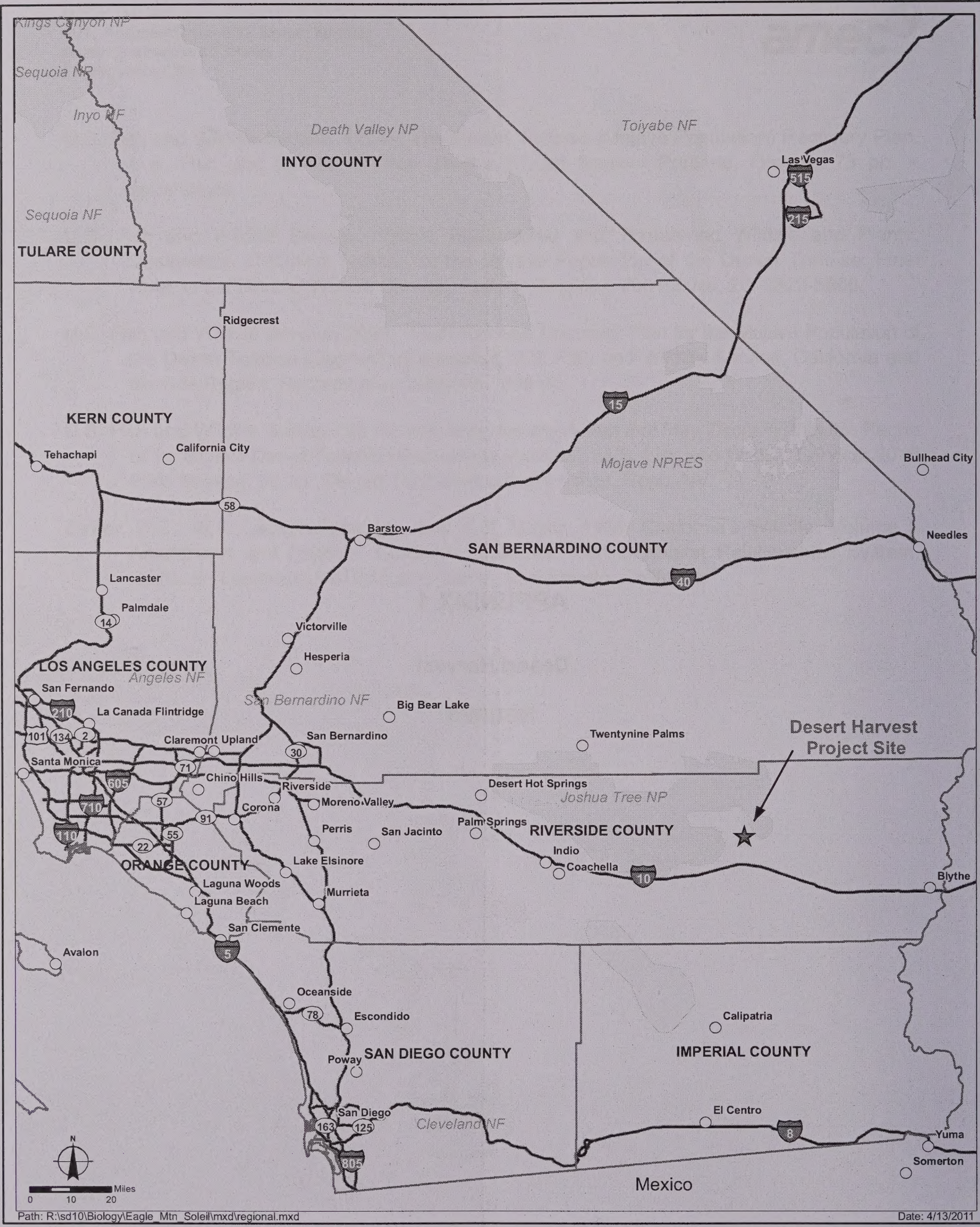
APPENDIX 1

Desert Harvest

FIGURES



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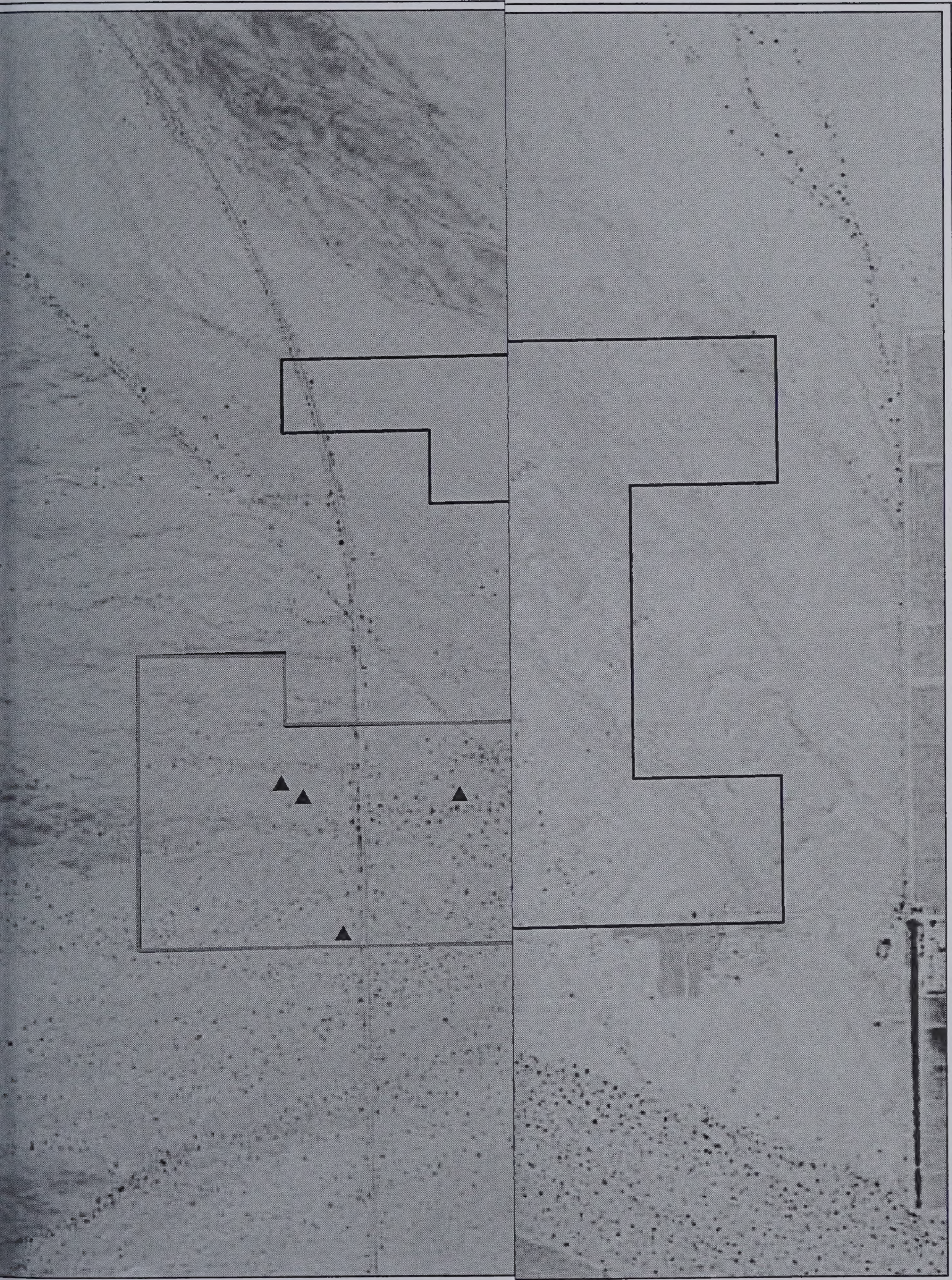
Regional Location
Desert Harvest Project

FIGURE
1



☐ 270ac Site Boundary*

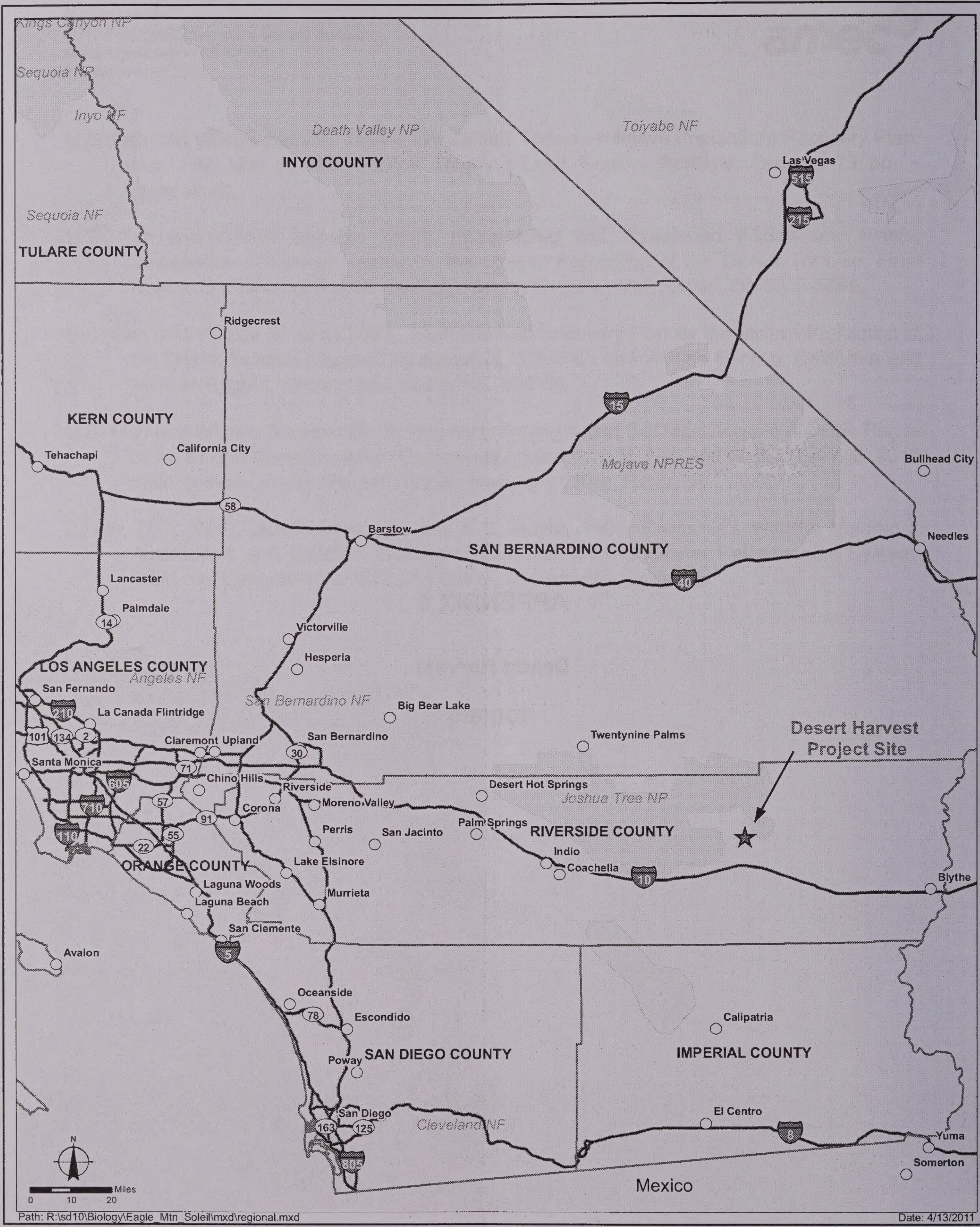
▲ Possible Desert Tortoise Burrow

/13/10

n: NAD_1983_California_Transverse_Mercator_[CTM]
s: Boundary_EagleMtn_041310(ASPEN)
ctive projects\EnXco\Desert Harvest 1155400460
MEC-5.26-28.11
5/11

N

amec



Path: R:\sd10\Biology\Eagle_Mtn_Soleil\mxd\regional.mxd

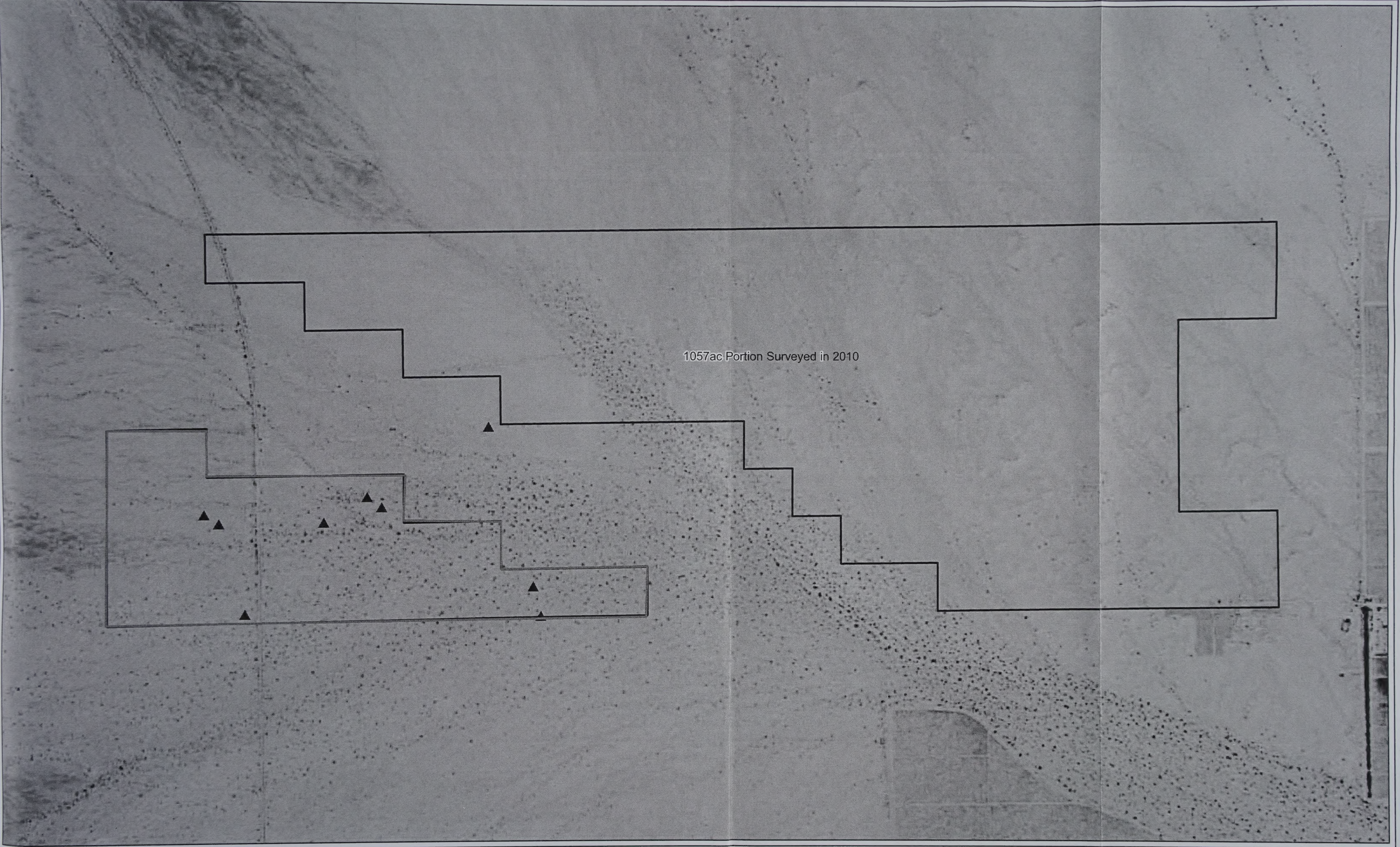
Date: 4/13/2011

amec

Regional Location
Desert Harvest Project

FIGURE

1



☐ 270ac Site Boundary*

▲ Possible Desert Tortoise Burrow

*4/13/10

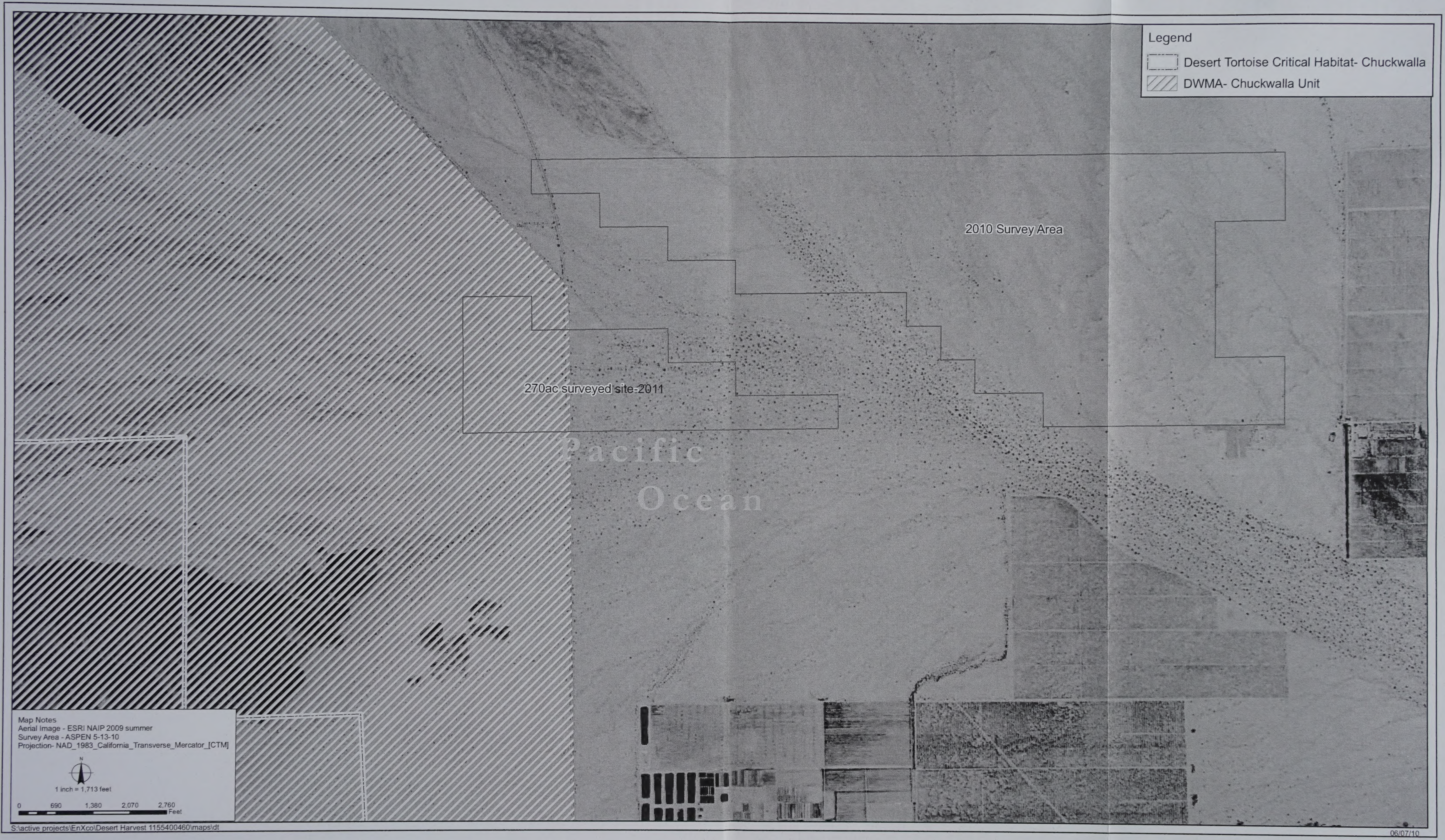
Desert Harvest Project

Figure 2

Desert Tortoise Sign

Data-
Projection: NAD_1983_California_Transverse_Mercator_[CTM]
Resources: Boundary_EagleMtn_041310(ASPEN)
Path:S:\active projects\EnXco\Desert Harvest 1155400460
Survey :AMEC-5.26-28.11
Date: 8/15/11

amec


Legend
Desert Tortoise Critical Habitat- Chuckwalla
DWMA- Chuckwalla Unit
2010 Survey Area
270ac surveyed site-2011
Pacific Ocean
Map Notes
Aerial Image - ESRI NAIP 2009 summer
Survey Area - ASPEN 5-13-10
Projection- NAD_1983_California_Transverse_Mercator_[CTM]
N
1 inch = 1,713 feet
0
690
1,380
2,070
2,760
Feet
S:\active projects\EnXco\Desert Harvest 1155400460\maps\dt
06/07/10

amec

Desert Tortoise Critical Habitat & Desert Wildlife Managment Area
Desert Harvest Project

FIGURE
3

APPENDIX 2

Desert Harvest

REPRESENTATIVE SITE PHOTOS

Photo 1. Representative example of creosote bush-white bursage and blue palo verde–ironwood woodland present on the 270-acre parcel.

Photo 2. Representative example of creosote bush-white bursage and blue palo verde–ironwood woodland series present on the 270-acre parcel.

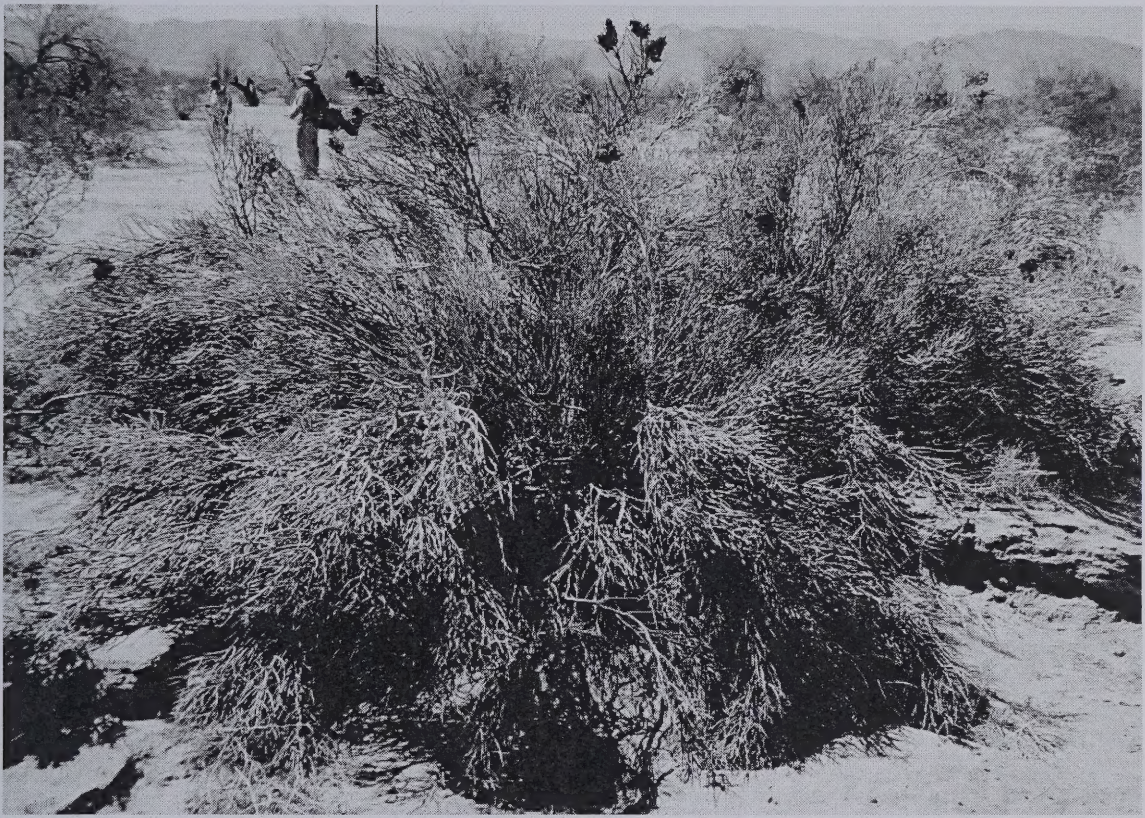


Photo 3. Emory's crucifixion thorn plants observed onsite. Surveyors lined up on transects in background, representative small mammal burrow in foreground beneath shrub.

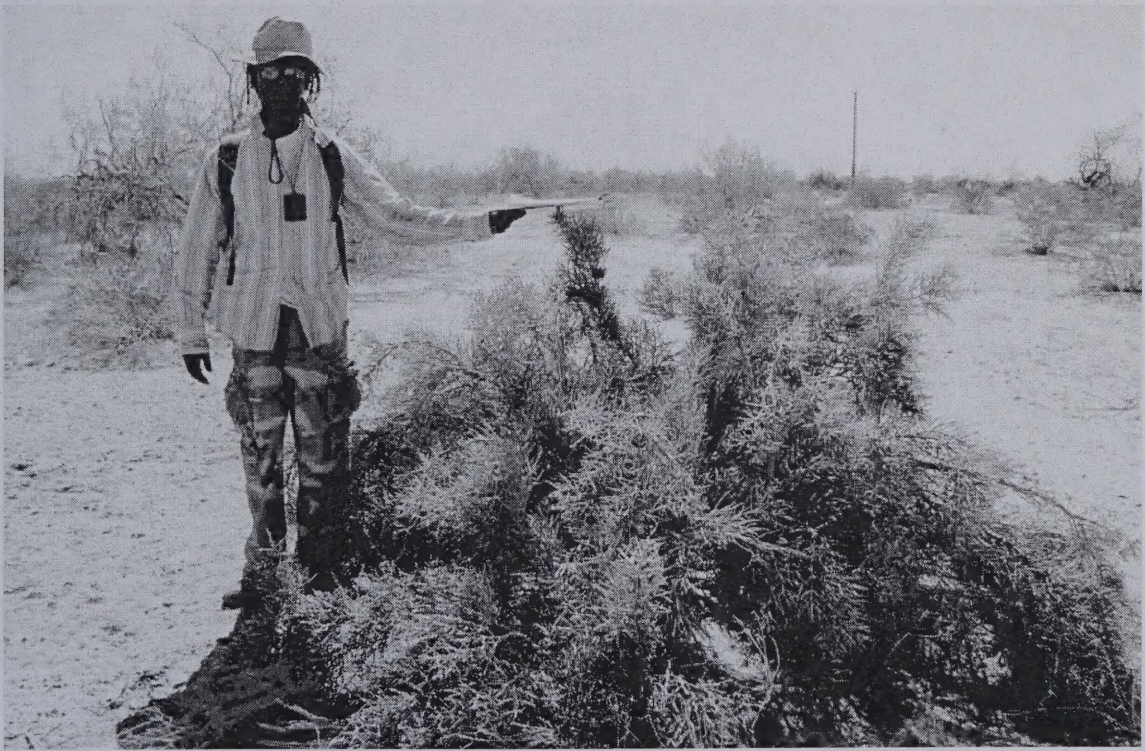


Photo 4. Surveyor stands next to an onsite Emory's crucifixion thorn.

Photo 5. Onsite class 5 “possible” desert tortoise burrow observed during surveys.

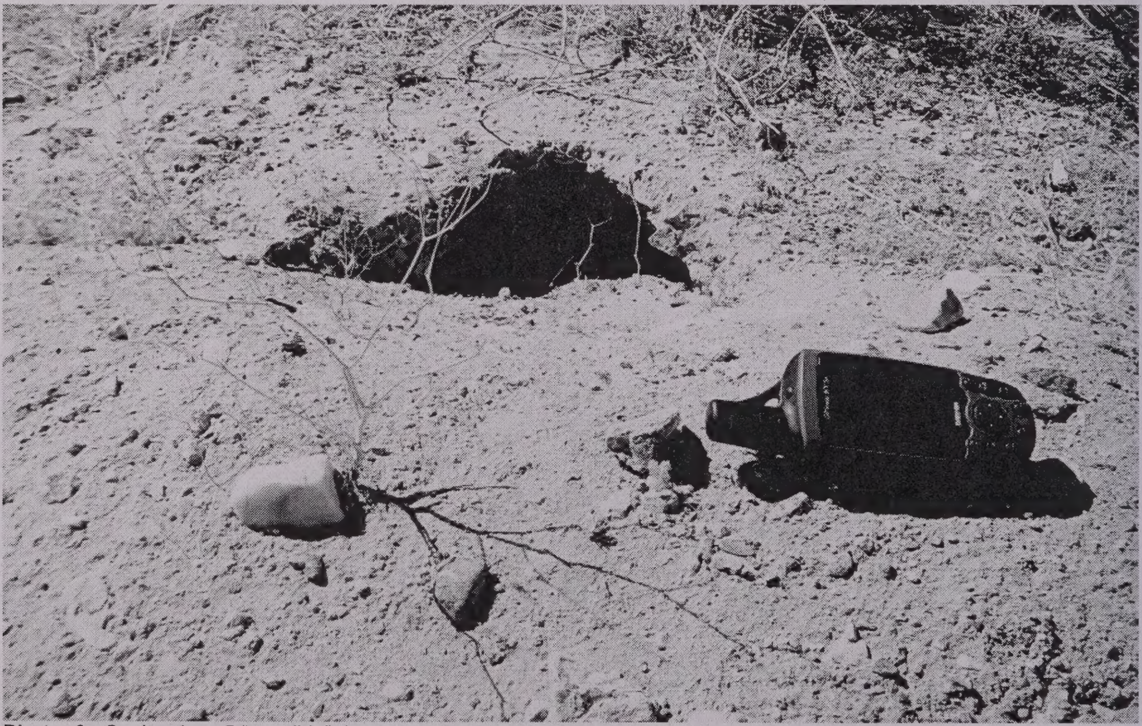


Photo 6. Onsite class 5 “possible” desert tortoise burrow observed during surveys.

APPENDIX 3

Desert Harvest

OBSERVED FAUNA SPECIES LIST

APPENDIX 3

Wildlife Observed on Desert Harvest 270-acre Site

This list reports only plants and animals observed on or immediately adjacent to the site while conducting focused desert tortoise and rare plant surveys for this project. Other species may have been overlooked or undetectable due to their activity season.

Nomenclature and taxonomy for fauna observed on site follows Stebbins (2003) and Collins and Taggert (2009) for herpetofauna, American Ornithologists' Union Checklist (1983 and supplements) for avifauna, and Laudenslayer *et al.* (1991) for mammals.

HERPETOFAUNA	**REPTILES & AMPHIBIANS**
SQUAMATA	**LIZARDS & SNAKES**
Iguanidae	**Iguanids**
Dipsosaurus dorsalis	desert iguana
Phrynosomatidae	**Spiny Lizards & Relatives**
Callisaurus draconoides	zebratail lizard
Uta stansburiana	side-blotched lizard
Teiidae	**Whiptails & Racerunners**
Aspidoscelis tigris	western whiptail
Colubridae	**Colubrids**
Chionactis occipitalis	western shovelnose snake

AVIFAUNA	**BIRDS**
Cathartidae	**Vultures**
Cathartes aura	turkey vulture
Columbidae	**Pigeons and Doves**
Zenaida asiatica	white-winged dove
Zenaida macroura	mourning dove
Caprimulgidae	**Goatsuckers**
Chordeiles acutipennis	lesser nighthawk
Tyrannidae	**Tyrant Flycatchers**
Myiarchus cinerascens	ash-throated flycatcher
Picidae	**Woodpeckers and Allies**
Picoides scalaris	ladder-backed woodpecker
Corvidae	**Jays, Magpies, and Crows**
Corvus corax	common raven

Remizidae	**Verdin**
Auriparus flaviceps	verdin
Sylviidae	**Old World Warblers and Gnatcatchers**
Polioptila melanura	black-tailed gnatcatcher
Emberizidae	**Emberizines**
Amphispiza bilineata	black-throated sparrow
MAMMALIA	**MAMMALS**
Leporidae	**Rabbits and Hares**
Lepus californicus	black-tailed jackrabbit
Sciuridae	**Squirrels**
Spermophilus tereticaudus	round-tailed ground squirrel
Heteromyidae	**Hereromyid Rodents**
Dipodomys sp.	kangaroo rat (burrows)
Muridae	**Rats, Mice, and Voles**
Neotoma lepida	desert woodrat (middens)
Canidae	**Foxes, Wolves, Coyotes**
Vulpes macrotis arsipus	desert kit fox (bones, burrows, colonies, scat, prints/tracks)

** Special-status species

APPENDIX 4

Desert Harvest

FIELD SURVEY FORMS

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 26 May 2011 (day, month, year) Survey biologist(s): Matt Amalong, matt.amalong@amec.com, 949-23 2134 (name, email, and phone number)

Site description: Desert Harvest, N of Desert Center (~5 miles N) (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 ac Transect #: 4 Transect length: 0.75 mile

GPS Start-point: 648052, 3739736, 201 (easting, northing, elevation in meters) Start time: 8:15 [✓ am]/pm

GPS End-point: 649643, 3739766, 190 (easting, northing, elevation in meters) End time: 8:51 [✓ am]/pm

Start Temp: 25 °C End Temp: 30 °C

Live Tortoises

Detection number	GPS location		Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (*burrows, scats, carcass, etc*)	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

Page: 1 of 1

Transect number: 4

2010 Field Season

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 26 May 2011 (day, month, year) Survey biologist(s): Matt Amalong, matt.amalong@amec.com, 949-23 (name, email, and phone number)

Site description: Desert Harvest ~5 miles N of Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 ac Transect #: 9 Transect length: 1.4 miles

GPS Start-point: 649641, 3739814, 189 (easting, northing, elevation in meters) Start time: 9:05 [✓ am]/pm

GPS End-point: 647425, 3739775, 211 (easting, northing, elevation in meters) End time: 10:02 [✓ am]/pm

Start Temp: 30 °C End Temp: 31 °C

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 9

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 26 May 2011 (day, month/year) Survey biologist(s): Matt Amalong, matt.amalong@amec.com, 949-233-2134 (name/email, and phone number)

Site description: Desert Harvest ~5 mi. N of Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 ac. Transect #: 14 Transect length: 1.4 mi

GPS Start-point: 647424, 3739825, 211 (easting, northing, elevation in meters) Start time: 10:13 [✓ am]/pm

GPS End-point: 649640, 3739864, 191 (easting, northing, elevation in meters) End time: 11:07 [✓ am]/pm

Start Temp: 31 °C End Temp: 33 °C

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 14

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 26 May 2011 (day, month, year) Survey biologist(s): Matt Amalong, matt.amalong@amec.com, 949-233-21 (name, email, and phone number)

Site description: Desert Harvest ~5 mi. N of Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 ac. Transect #: 19 Transect length: 1.4 mi.

GPS Start-point: 649639, 3737914, 190 (easting, northing, elevation in meters) Start time: 11:24 [✓ am]/pm

GPS End-point: 647423, 3739875, 210 (easting, northing, elevation in meters) End time: 12:29 am/[✓ pm]

Start Temp: 33 °C End Temp: 33 °C

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 19

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 26 May 2011 (day, month, year) Survey biologist(s): Matt Amalong, matt.amalong@amec.com, 949233213 (name, email, and phone number)

Site description: Desert Harvest ~5 mi. N of Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 ac. Transect #: 24 Transect length: 1 mi.

GPS Start-point: 647423, 3739925, 212 (easting, northing, elevation in meters) Start time: 12:36 am/[✓ pm]

GPS End-point: 649030, 3739954, 200 (easting, northing, elevation in meters) End time: 13:05 am/[✓ pm]

Start Temp: 33 °C End Temp: 34 °C

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				

2010 Field Season

Page: 1 of 1

Transect number: 24

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 26 May 2011 (day, month, year) Survey biologist(s): Matt Amalong, Matt.amalong@amec.com, 94923321 (name, email, and phone number)

Site description: Desert Harvest ~5 mi. N of Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 ac. Transect #: 29 Transect length: 1 mi.

GPS Start-point: 649029, 3740004, 200 (easting, northing, elevation in meters) Start time: 13:15 am/[✓ pm]

GPS End-point: 647422, 3739975, 210 (easting, northing, elevation in meters) End time: 14:00 am/[✓ pm]

Start Temp: 34 °C End Temp: 38 °C

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 29

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 26 May 2011 (day, month, year) Survey biologist(s): Matt Amalong, matt.amalong@amec.com 949 233 2134 (name, email, and phone number)

Site description: Desert Harvest ~5 mi. N of Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 ac. Transect #: 34W Transect length: 0.4 mi.

GPS Start-point: 647421, 3740025, 211 (easting, northing, elevation in meters) Start time: 14:07 am/[✓ pm]

GPS End-point: 648048, 3740036, 205 (easting, northing, elevation in meters) End time: 14:19 am/pm

Start Temp: 38 °C End Temp: 38 °C

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 34W

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27 May 2011 (day, month, year) Survey biologist(s): Matt Amalong, matt.amalong@amec.com 949-233-21 (name, email, and phone number)

Site description: Desert Harvest ~5 mi N of Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 ac Transect #: 34E Transect length: 0.6 mi.

GPS Start-point: 648048, 3740036, 205 (easting, northing, elevation in meters) Start time: 7:45 [✓ am]/pm

GPS End-point: 649029, 3740054, 191 (easting, northing, elevation in meters) End time: 8:08 [✓ am]/pm

Start Temp: 25 °C End Temp: 25 °C

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 34E

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27 May 2011 (day, month, year) Survey biologist(s): Matt Amalong, matt.amalong@amec.com, 949-233-2134 (name, email, and phone number)

Site description: Desert Harvest ~5 mi. N of Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 ac. Transect #: 39 Transect length: 1 mi.

GPS Start-point: 649028, 3740104, 193 (easting, northing, elevation in meters) Start time: 8:22 [✓ am]/pm

GPS End-point: 647420, 3740075, 208 (easting, northing, elevation in meters) End time: 8:57 [✓ am]/pm

Start Temp: 25 °C End Temp: 28 °C

Live Tortoises

Detection number	GPS location		Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (*burrows, scats, carcass, etc*)	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 39

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27 May 2011 (day, month, year) Survey biologist(s): Matt Amalong, matt.amalong@amec.com 949-233-21 (name, email, and phone number)

Site description: Desert Harvest ~5 mi. N of Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 ac. Transect #: 600NW Transect length: 1.2 mi

GPS Start-point: 646835, 3740042, 218 (easting, northing, elevation in meters) Start time: 9:30 [✓ am]/pm

GPS End-point: 647919, 3741114, 207 (easting, northing, elevation in meters) End time: 10:00 [✓ am]/pm

Start Temp: 29 °C End Temp: 30 °C

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 600NW

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27 May 2011 (day, month, year) Survey biologist(s): Matt Amalong, matt.amalong@aeec.com (name, email, and phone number)

Site description: Desert Harvest ~5 mi. N of Desert Center (project name and size; general location)

County: Riverside Quad: ____ Location: Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 ac. Transect #: 400 NW Transect length: 1.03 mi.

GPS Start-point: 647971, 3740863, 206 (easting, northing, elevation in meters) Start time: 10:06 [✓ am]/pm

GPS End-point: 647027, 3740049, 216 (easting, northing, elevation in meters) End time: 10:30 [✓ am]/pm

Start Temp: 30 °C End Temp: 31 °C

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 400 NW

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27 May 2011 (day, month, year) Survey biologist(s): Matt Amalong, matt.amalong@amec.com, 949-233-2 (name, email, and phone number)

Site description: Desert Harvest ~5 mi. N of Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 ac. Transect #: 200 NW Transect length: 0.95 mi.

GPS Start-point: 647225, 3740058, 213 (easting, northing, elevation in meters) Start time: 10:37 [✓ am]/pm

GPS End-point: 648034, 3740499, 203 (easting, northing, elevation in meters) End time: 11:04 [✓ am]/pm

Start Temp: 31 °C End Temp: 32 °C

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 200 NW

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27 May 2011 (day, month, year) Survey biologist(s): Matt Amalong, matt.amalong@amec.com, 949-2332134 (name, email, and phone number)

Site description: Desert Harvest ~5 mi. N of Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 ac. Transect #: 52 Transect length: 0.75 mi.

GPS Start-point: 647425, 3740204, 213 (easting, northing, elevation in meters) Start time: 12:09 am/[✓ pm]

GPS End-point: 648629, 3740227, 203 (easting, northing, elevation in meters) End time: 12:38 am/[✓ pm]

Start Temp: 35 °C End Temp: 38 °C

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 52

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27 May 2011 (day, month, year) Survey biologist(s): Matt Amalong, matt.amalong@amec.com (name, email, and phone number)

Site description: Desert Harvest ~5 mi. N of Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 ac. Transect #: 55 Transect length: 0.75 mi.

GPS Start-point: 648627, 3740257, 203 (easting, northing, elevation in meters) Start time: 12:48 am/[✓ pm]

GPS End-point: 647423, 3740237, 213 (easting, northing, elevation in meters) End time: 13:23 am/[✓ pm]

Start Temp: 38 °C End Temp: 39 °C

Live Tortoises

Detection number	GPS location		Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (*burrows, scats, carcass, etc*)	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 55

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27 May 2011 (day, month, year) Survey biologist(s): Matt Amalong, matt.amalong@amec.com, 9492332134 (name, email, and phone number)

Site description: Desert Harvest ~5 mi. N of Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd, (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 ac. Transect #: 58 Transect length: 0.75 mi

GPS Start-point: 647423, 3740264, 212 (easting, northing, elevation in meters) Start time: 13:27 am/[✓ pm]

GPS End-point: 648626, 3740287, 203 (easting, northing, elevation in meters) End time: 13:57 am/[✓ pm]

Start Temp: 39 °C End Temp: 39 °C

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 58

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/26/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengist@yahoo 414875 (name, email, and phone number)

Site description: Desert Harvest Project North of Desert center (5mik) (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257ha Transect #: 5 Transect length: 3/4 mi

GPS Start-point: 0648097/3739744E 662 F (easting, northing, elevation in meters) Start time: 8:15 [✓ am]/pm

GPS End-point: 649641/3739788 E618F (easting, northing, elevation in meters) End time: 8:51 [✓ am]/pm

Start Temp: 25 °C End Temp: 30 °C

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: ____ of ____

Transcript number: ____

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/27/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu Tmengistu@yahoo.com 714-875-69 (name, email, and phone number)

Site description: Desert Harvest Project North of Desert Center (5mile) (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: ______ Transect #: 40 Transect length: 1 mi

GPS Start-point: 649028/3780114 639 ft (easting, northing, elevation in meters) Start time: 8:23 [✓ am]/pm

GPS End-point: 649028/3740095 690 ft (easting, northing, elevation in meters) End time: 8:57 [✓ am]/pm

Start Temp: 25 °C 77 °F End Temp: 27 °C 79 °F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: ____of____

Transcect number: ______

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/26/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengistu@yaho (name, email, and phone number) 714-875-

Site description: Desert Harvest Project North of Desert Center (5miles) (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257h Transect #: 10 Transect length: 1.5 mile

GPS Start-point: 0649625/3739839 618 ft (easting, northing, elevation in meters) Start time: 9:05 [✓ am]/pm

GPS End-point: 0647410/3739790 698 ft (easting, northing, elevation in meters) End time: 9:59 [✓ am]/pm

Start Temp: 30 °C 86°F End Temp: 31 °C 88°F

Live Tortoises

Detection number	GPS location Easting	 Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	 Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

Page: ____of____

Transect number: ____

2010 Field Season

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/26/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengist@yahoo.co 714-875-69 (name, email, and phone number)

Site description: Desert Harvest Project North of Desert Center (5 mil) (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 hec Transect #: 15 Transect length: 1.4 mi

GPS Start-point: 0644558/3620588. 698ft (easting, northing, elevation in meters) Start time: 10:13 [✓ am]/pm

GPS End-point: 0649640/3739874. 626ft (easting, northing, elevation in meters) End time: 11:07 [✓ am]/pm

Start Temp: 31 °C 88°F End Temp: 92 °C 33°F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
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7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: ____of____

Transect number: ______

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/26/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengist@yahoo.co 714-875-6 (name, email, and phone number)

Site description: Desert Harvest Project North of Desert Center (5mi (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 hec Transect #: 20 Transect length: 1.4 mil

GPS Start-point: 0649639/3739924 626 ft (easting, northing, elevation in meters) Start time: 11:24 [✓ am]/pm

GPS End-point: 0647423/3739885 691 ft (easting, northing, elevation in meters) End time: 12:29 am/[✓ pm]

Start Temp: 32 °C 93°F End Temp: 32 °C 92°F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: ____ of ____

Transect number: ____

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/26/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengist@yahoo.com 714-875-6961 (name, email, and phone number)

Site description: Desert Harvest Project North of Desert Center (5mi) (project name and size; general location)

County: Riverside Quad: ______ Location: Keiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 h Transect #: 25 Transect length: 1.0 mile

GPS Start-point: 0647423/3739975 691ft (easting, northing, elevation in meters) Start time: 12:36 am/[✓ pm]

GPS End-point: 0647030/3739964 650ft (easting, northing, elevation in meters) End time: 13:05 am/[✓ pm]

Start Temp: 32 °C 92°F End Temp: 33 °C 93°F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: _____of______

Transect number: ______

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/26/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengist@ yahoo 714 875- (name, email, and phone number)

Site description: Desert Harvest Project North of Desert Center (5 Mile) (project name and size; general location)

County: Riverside Quad: ____________ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 257 hec Transect #: 35W Transect length: 0.4 Mi

GPS Start-point: 647421/3740035 697 ft (easting, northing, elevation in meters) Start time: 2:08 am/[✓ pm]

GPS End-point: 648048/3740046 666 ft (easting, northing, elevation in meters) End time: 2:19 am/pm

Start Temp: 38 °C 100°F End Temp: 39 °C 104°F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: _____ of _____

Transect number: ______

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/27/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengist@yahoo.Com 714-875-6968 (name, email, and phone number)

Site description: Desert Harvest Project North of Desert Center (5miles) (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: ______ Transect #: 35 E Transect length: .6mi

GPS Start-point: 648048/3740046 668 ft (easting, northing, elevation in meters) Start time: 7:45 [✓ am]/pm

GPS End-point: 649028/3740064 636 ft (easting, northing, elevation in meters) End time: 8:08 am/pm

Start Temp: 24 °C 74°F End Temp: 25 °C 77°F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: ____ of ____

Transect number: ____

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/27/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengist@yah 714.875-6 (name, email, and phone number)

Site description: Desert Harvest Project North of Desert Center (5 mile) (project name and size; general location)

County: Riverside Quad: ________ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: ________ Transect #: 42 Transect length: .75mi

GPS Start-point: 6490486/374100 210M (easting, northing, elevation in meters) Start time: 9:15 [✓ am]/pm

GPS End-point: 6484629/374026 199m (easting, northing, elevation in meters) End time: 9:50 [✓ am]/pm

Start Temp: 27 °C 83°F End Temp: 28 °C 86°F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	0647875	3740107	burrow C.5	good condition no recent use
2	0648363	3740109	burrow C.5	good condition possible DT
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: ____of____

Transect number: ____

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/27/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengist@yahoo.com 714-871-'68 (name, email, and phone number)

Site description: Desert Harvest Project (project name and size; general location)

County: ____ Quad: ____ Location: Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: ____ Transect #: 46 Transect length: .75mi

GPS Start-point: 0647423/ 3740145 210m (easting, northing, elevation in meters) Start time: 10:40 [✓ am]/pm

GPS End-point: 0648629/ 3740164 196m (easting, northing, elevation in meters) End time: 11:05 [✓ am]/pm

Start Temp: 32 °C 89°F End Temp: 31 °C 90

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: ____of____

Transect number: ____

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/27/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengist@yahoo.com 714- (name, email, and phone number)

Site description: Desert harvest Project North of Desert Center (5 miles) (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: ______ Transect #: 48 Transect length: '75m

GPS Start-point: 0648631 / 3740189 197M (easting, northing, elevation in meters) Start time: 11:15 [✓ am]/pm

GPS End-point: 0647424 / 3740163 209m (easting, northing, elevation in meters) End time: 12:04 am/[✓ pm]

Start Temp: 32 °C 90°F End Temp: 35 °C 96°F

Live Tortoises

Detection number	GPS location Easting	 Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	 Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: _____ of ______

Transect number: ______

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/27/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengist@ yahoo.co 714-875-6 (name, email, and phone number)

Site description: Desert Harvest Project North of Desert Center (5 miles) (project name and size; general location)

County: Riverside Quad: ____ Location: Kasier Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: ____ Transect #: 44 Transect length: .75mi

GPS Start-point: 0648630 / 3740148 199m (easting, northing, elevation in meters) Start time: 9:45 [✓ am]/pm

GPS End-point: 0647423 / 3740131 210 M (easting, northing, elevation in meters) End time: 10:35 [✓ am]/pm

Start Temp: 28 °C 86°F End Temp: 32 °C 94°F

Live Tortoises

Detection number	GPS location		Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (*burrows, scats, carcass, etc*)	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: ____ of ____

Transect number: ____

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/27/2011 (day, month, year) Survey biologist(s): tsegaye Mengistu tmengist@yahoo.com 714-875 (name, email, and phone number)

Site description: Desert Harvest Project North of Desert center 5mi (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: ______ Transect #: 50 Transect length: .75mi

GPS Start-point: 0647423/3740185 197M (easting, northing, elevation in meters) Start time: 12:15 am/[✓ pm]

GPS End-point: 064724 / 3740206 201 M (easting, northing, elevation in meters) End time: 12:38 am/[✓ pm]

Start Temp: 35 °C 96°F End Temp: ______ °C

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: _____ of _____

Transect number: ______

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/27/2011 (day, month, year) Survey biologist(s): Tbegaye Mengistu tmengist@yahoo.com 714·875-6968 (name, email, and phone number)

Site description: Desert Harvest Project North of Desert Center (5mil) (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 1/7 hct Transect #: 5 Transect length: .75mi

GPS Start-point: 0648625/3740250 203 M (easting, northing, elevation in meters) Start time: 12:48 am/[✓ pm]

GPS End-point: 0647419/3740227 212 M (easting, northing, elevation in meters) End time: 1:25 am/[✓ pm]

Start Temp: 38 °C 100°F End Temp: 39 °C 102°F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: _____of_____

Transect number: ______

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/27/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu TMengist@yahoo c 414 875- (name, email, and phone number)

Site description: Desert harvest Project North of Desert, Center (5 mile) (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 hec Transect #: 57 Transect length: 175 mi

GPS Start-point: 0647418/3740258 212M (easting, northing, elevation in meters) Start time: 1:28 am/[✓ pm]

GPS End-point: 0648611/3740282 203M (easting, northing, elevation in meters) End time: 1:58 am/[✓ pm]

Start Temp: 39 °C 102 End Temp: 39 °C 101 °F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: _____ of _____

Transect number: _____

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/27/2011 ((day, month, year)) Survey biologist(s): Tsegaye Mengistu tmengistu yahoo.com 714-871-6968 (name, email, and phone number)

Site description: Desert Harvest project North of Desert Center (5mile) (project name and size; general location)

County: Riverside Quad: ________ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 217 hac Transect #: 59 Transect length: .75

GPS Start-point: 0648630 / 3740297 670 ft (easting, northing, elevation in meters) Start time: 2:05 am/[✓ pm]

GPS End-point: 0647417 / 3740280 706 ft (easting, northing, elevation in meters) End time: 2:28 am/[✓ pm]

Start Temp: 39 °C 101 °F End Temp: ______ °C

Live Tortoises

Detection number	GPS location		Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (*burrows, scats, carcass, etc*)	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: _____ of _____

Transect number: ______

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/27/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengister@yahoo.com 714-878-6 (name, email and phone number)

Site description: Desert Harvest Project North of Desert Center (5mi) (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 217 hec Transect #: 61 Transect length: .250 mi

GPS Start-point: 0647422/3740302 706 ft (easting, northing, elevation in meters) Start time: 2:40 am/[✓ pm]

GPS End-point: 0647850/3740291 687 ft (easting, northing, elevation in meters) End time: 2:50 am/[✓ pm]

Start Temp: 37 °C 99 End Temp: 37 °C 99°

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
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4						
5						
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7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: ____ of ____

Transect number: ____

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/27/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengist@yahoo.com 714-875-6968 (name, email, and phone number)

Site description: Desert Harvest Project North & Desert Center (5mi) (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 257 ha Transect #: 63 Transect length: +25mi

GPS Start-point: 0647822 / 3740323 687 ft (easting, northing, elevation in meters) Start time: 2:54 am/[✓ pm]

GPS End-point: 06471427 / 3740320 700 ft (easting, northing, elevation in meters) End time: 3:01 am/[✓ pm]

Start Temp: 37 °C 99°c End Temp: 37 °C 99°F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
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8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: ____of____

Transect number: ______

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/27/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu emengist@ yahoo 714-875-6 (name, email, and phone number)

Site description: Desert Harvest Project North of Desert Center (5mi (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 217 hec Transect #: 65 Transect length: .25 m

GPS Start-point: 0647420/3740340 700 ft (easting, northing, elevation in meters) Start time: 3:08 am/[✓ pm]

GPS End-point: 0647825/374348 686 ft (easting, northing, elevation in meters) End time: 3:15 am/[✓ pm]

Start Temp: 38 °C 101°F End Temp: 38 °C 101°F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
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7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: ____ of ____

Transect number: ____

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/27/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengistie@yahoo.com 714-875-69 (name, email, and phone number)

Site description: Desert Harvest Project North of Desert center (5 mile) (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 217 hec Transect #: 67 Transect length: .25 mi

GPS Start-point: 0647822/3740363/688ft (easting, northing, elevation in meters) Start time: 3:20 am/[✓ pm]

GPS End-point: 0647824/3740358/697ft (easting, northing, elevation in meters) End time: 3:27 am/[✓ pm]

Start Temp: 38 °C 101°F End Temp: 39 °C 103°F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
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5						
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7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: _____ of _____

Transect number: _____

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/27/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengist@yahoo.c 714-875- (name, email, and phone number)

Site description: Desert Harvest Project North of Desert center (5 mil) (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 217 hec Transect #: 69 Transect length: .25 mi

GPS Start-point: 0647423/3740381 697 ft (easting, northing, elevation in meters) Start time: 3:34 am/[✓ pm]

GPS End-point: 0647872/3740384 692 ft (easting, northing, elevation in meters) End time: 3:42 am/pm

Start Temp: 39 °C 103° F End Temp: 39 °C 103° F

Live Tortoises

Detection number	GPS location Easting	 Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	 Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: _____ of _____

Transect number: _____

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/28/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengist@ yahoo.c 714-8756968 (name, email, and phone number)

Site description: Desert Harvest Project North of Desert Center (5mi) (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 217 her Transect #: 600E Transect length: 2mi

GPS Start-point: 0648060/3739082 652ft (easting, northing, elevation in meters) Start time: 6:07 [✓ am]/pm

GPS End-point: 0648065/3739085 680ft (easting, northing, elevation in meters) End time: 7:38 [✓ am]/pm

walked 2mi
VP and 2mi
down on the
same line

Start Temp: ______ °C 76°F End Temp: ______ °C 78°F

Live Tortoises

Detection number	GPS location		Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (*burrows, scats, carcass, etc*)	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 600E

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/28/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengist@yahoo.c 714-875-6 (name, email, and phone number)

Site description: Desert Harvest Project North of Desert Center (5mi) (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 217 hec Transect #: 71 Transect length: .25 mi

GPS Start-point: 0647828/3740403 668 ft (easting, northing, elevation in meters) Start time: 8:06 [✓ am]/pm

GPS End-point: 0647427/3740393 683 ft (easting, northing, elevation in meters) End time: 8:15 [✓ am]/pm

Start Temp: ______ °C 83°F End Temp: ______ °C 83°F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: ____ of ____

Transcript number: ____

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/28/2011 (day, month, year) Survey biologist(s): TSEGAYE Mengistu tmengist@yahoo.com 714-875-6968 (name, email, and phone number)

Site description: Desert Harvest Project North 7 Desert Center (5mi) (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. Off. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 217 hec Transect #: 73 Transect length: .25 mi

GPS Start-point: 0647417/3740420 687ft (easting, northing, elevation in meters) Start time: 8:20 [✓ am]/pm

GPS End-point: 0647822/3740418 666ft (easting, northing, elevation in meters) End time: 8:27 [✓ am]/pm

Start Temp: ______°C 84°F End Temp: ______°C 84°F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: ______of______

Transect number: ______

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/28/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengist@ yahoo. 714-875- (name, email, and phone number)

Site description: Desert Harvest Project North of Desert Center (5 mi) (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 217 hec Transect #: 75 Transect length: .25 mi

GPS Start-point: 0647821/3740444 664 ft (easting, northing, elevation in meters) Start time: 832 [✓ am]/pm

GPS End-point: 0647427/3740436 683 ft (easting, northing, elevation in meters) End time: 8:40 [✓ am]/pm

Start Temp: ______ °C 84°F End Temp: ______ °C 85°F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
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8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
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4				
5				
6				
7				
8				

2010 Field Season

Page: _____ of ______

Transcect number: ______

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/28/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengist@yahoo.com 714-875-6968 (name, email, and phone number)

Site description: Desert Harvest Project North of Desert Center (5mi) (project name and size; general location)

County: River side Quad: ______ Location: Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 217 hec Transect #: 77 Transect length: .25 mi

GPS Start-point: 0647410 / 3740456 688 ft (easting, northing, elevation in meters) Start time: 8:46 [✓ am]/pm

GPS End-point: 0647813 / 374 0457 667 ft (easting, northing, elevation in meters) End time: 8:54 am/pm

Start Temp: ______°C 85°F End Temp: ______°C 86°F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
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7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
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4				
5				
6				
7				
8				

2010 Field Season

Page: _____ of ______

Transect number: ______

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/28/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengist@yahoo.com 714-875- (name, email, and phone number)

Site description: Desert Harvest Project North of Desert center (5mil) (project name and size; general location)

County: Riverside Quad: ______ Location: Off Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 217hec Transect #: 79 Transect length: 0.25mi

GPS Start-point: 0647820 / 3740482 670ft (easting, northing, elevation in meters) Start time: 8:59 [✓ am]/pm

GPS End-point: 0647424 / 3740482 684ft (easting, northing, elevation in meters) End time: 9:07 [✓ am]/pm

Start Temp: ______ °C 87°F End Temp: ______ °C 87°F

Live Tortoises

Detection number	GPS location Easting	 Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
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7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	 Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: ______ of ______

Transcect number: ______

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/28/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengist@yahoo.com 714 975-6968 (name, email, and phone number)

Site description: Desert Harvest Project North of Desert Center (5mi) (project name and size; general location)

County: Riverside Quad: ______ Location: off Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 2/7 hec Transect #: 4W Transect length: .38 mi

GPS Start-point: 0647416/3739727 685ft (easting, northing, elevation in meters) Start time: 10:34 [✓ am]/pm

GPS End-point: 0648038/3739734 664ft (easting, northing, elevation in meters) End time: 10:50 [✓ am]/pm

Start Temp: ______ °C 93°F End Temp: ______ °C 93°F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
P=009 1	0647989	3739732	burrow C=5	Class 5 Potential Burrow
2				
3				
4				
5				
6				
7				
8				

Way Point-008 = Crucifixion thorn
0647969
3739746

ran#4W

Page: _____ of _____

Transect number: ______

2010 Field Season

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/28/11 (day, month, year) Survey biologist(s): Tsegaye Mengistu tmengist@ yaho 714-875-6 (name, email, and phone number)

Site description: Desert Harvest Project North of Desert center (5mi) (project name and size; general location)

County: Riverside Quad: ______ Location: off Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 2/7/ac Transect #: 2w Transect length: 038 Mi

GPS Start-point: 0648038/3739717 667 ft (easting, northing, elevation in meters) Start time: 10:15 [✓ am]/pm

GPS End-point: 0647407/3739709 684 ft (easting, northing, elevation in meters) End time: 10:25 [✓ am]/pm

Start Temp: ____ °C 92°F End Temp: ____ °C 91°F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: ____ of ____

Transect number: ____

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 5/26/2011 (day, month, year) Survey biologist(s): Tsegaye Mengistu Tmengist@yahoo.com 714-875-6968 (name, email, and phone number)

Site description: Desert Harvest Project North of Desert Center (5mile) (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257h Transect #: 30 Transect length: 1.0 mile

GPS Start-point: 649029 / 3740014 624 ft (easting, northing, elevation in meters) Start time: 1:15 am/[✓ pm]

GPS End-point: 649422 / 3739985 697ft (easting, northing, elevation in meters) End time: 2:00 am/pm

Start Temp: 33 °C 93°F End Temp: 38 °C 100°F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: _____ of _____

Transect number: _____

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 26/5/2011 (day, month, year) Survey biologist(s): Nathan Moorhatch (name, email, and phone number)

Site description: ______ (project name and size; general location)

County: Riverside Co. Quad: ______ Location: 5 mi. N of Desert Center on Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 2 Transect length: ______

GPS Start-point: N 33.78725 W 115.40078 662 ft. (easting, northing, elevation in meters) Start time: 0815 [✓ am] pm

GPS End-point: N 33.78728 W 115.38368 618 ft. (easting, northing, elevation in meters) End time: 0851 [✓ am] pm

Start Temp: 25 °C End Temp: 86 °~~C~~F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Callisaurus drac.

Page: ______ of ______

Transect number: 2

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 26/5/2011 (day, month, year) Survey biologist(s): Nathan Moorhatch (name, email, and phone number)

Site description: ____ (project name and size; general location)

County: Riverside Quad: ____ Location: 5 mi. N. of Desert Center on Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 7 Transect length: 1.4 mi.

GPS Start-point: N 33.78773 W 115.38369 (easting, northing, elevation in meters) Start time: 0905 [✓ am]/pm

GPS End-point: N 33.78769° W 115.40761° 212 m (easting, northing, elevation in meters) End time: 1000 [✓ am]/pm

Start Temp: 86 °~~C~~ F End Temp: 88 °~~C~~F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No* or *Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

Aspidoscelis tigris
Verdin
Spermopholis teretianda
Ash-throated Flycatcher

Page: ____ of ____

Transect number: ____

2010 Field Season

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 26/5/2011 (day, month, year) Survey biologist(s): Nathan Moorhatch (name, email, and phone number)

Site description: ______ (project name and size; general location)

County: Riverside Quad: ______ Location: ~5 mi. N. of Desert Center on Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 12 Transect length: ______

GPS Start-point: N 33.78814° W 115.40761° (easting, northing, elevation in meters) Start time: 10:13 [✓ am]/pm

GPS End-point: N 33.78818° W 115.38369 626 ft. (easting, northing, elevation in meters) End time: 11:07 [✓ am]/pm

Start Temp: 88 °~~C~~F End Temp: 92 °~~C~~ F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Common Raven

Page: ____ of ____

Transect number: 12

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 26/5/2011 (day, month, year) Survey biologist(s): Nathan Moorhatch (name, email, and phone number)

Site description: ____ (project name and size; general location)

County: Riverside Quad: ____ Location: ~5 mi. N. of Desert Center (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 17 Transect length: 1.37 mi

GPS Start-point: N 33.78863 W 115.38369° 191m (easting, northing, elevation in meters) Start time: 11:24 [✓ am]/pm

GPS End-point: N 33.78856° W 115.40755° 210 m (easting, northing, elevation in meters) End time: 12:29 am/[✓ pm]

} −15 min. for lunch

Start Temp: 92 °~~C~~F End Temp: 92 °~~C~~F

Live Tortoises

Detection number	GPS location		Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (*burrows, scats, carcass, etc*)	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

Desert Iguana

Page: ____ of ____

Transect number: 17

2010 Field Season

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

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Date of survey: 26/5/2011 (day, month, year) Survey biologist(s): Nathan Moorhatch (name, email, and phone number)

Site description: ______ (project name and size; general location)

County: Riverside Quad: ______ Location: ~5 mi. N. of Desert Center (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 22 Transect length: ______

GPS Start-point: N 33.78903° W 115.40763° (easting, northing, elevation in meters) Start time: 12:36 am/[✓ pm]

GPS End-point: N 33.789120° W 115.390240° 197 m (easting, northing, elevation in meters) End time: 13:05 am/[✓ pm]

Start Temp: 92 °~~C~~F End Temp: 93 °C

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Lepus cal.

Page: ____ of ____

Transect number: 22

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

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Date of survey: 26/5/2011 (day, month, year) Survey biologist(s): Nathan Moorhatch (name, email, and phone number)

Site description: ______ (project name and size; general location)

County: Riverside Quad: ______ Location: 5 mi. N. of Desert Center (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 27 Transect length: 1.0 mi

GPS Start-point: N 33.78952° W 115.39025° 649 ft. (easting, northing, elevation in meters) Start time: 13:15 am/[✓ pm]

GPS End-point: 11 S 0647'422 3739957 210 m (easting, northing, elevation in meters) End time: 14:00 am/[✓ pm]

Start Temp: 93 °~~C~~F End Temp: 100 °~~C~~F

2010 Field Season

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

Page: _____ of _____

Transect number: 27

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 26/5/2011 (day, month, year) Survey biologist(s): Nathan Moorhatch (name, email, and phone number)

Site description: (project name and size; general location)

County: Riverside Quad: Location: 5 mi. N. of Desert Center (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 32 Transect length:

GPS Start-point: 11S 0647421 3740005 (easting, northing, elevation in meters) Start time: 14:08 am/[✓ pm]

GPS End-point: (easting, northing, elevation in meters) End time: 14:23 am/[✓ pm]

Start Temp: 100 °~~C~~F End Temp: 101 °~~C~~F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: ____ of ____

Transect number: 32

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27/5/2011 (day, month, year) Survey biologist(s): Nathan Moorhatch (name, email, and phone number)

Site description: ______ (project name and size; general location)

County: Riverside Quad: ______ Location: 5 mi. N. of Desert Center on Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 32E Transect length: 0.6 mi.

GPS Start-point: 115 0648049 3740014 666ft. (easting, northing, elevation in meters) Start time: 0745 [✓ am]/pm

GPS End-point: 115 0649033 3740035 633ft. (easting, northing, elevation in meters) End time: 0809 [✓ am]/pm

Start Temp: 74 °~~C~~F End Temp: 77 °~~C~~F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

Chionactis (tracks)
WWDO

2010 Field Season

Page: ____of____

Transect number: 32E

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27/5/2011 (day, month, year) Survey biologist(s): Nathan Moorhatch (name, email, and phone number)

Site description: ______ (project name and size; general location)

County: Riverside Quad: ______ Location: 5 mi. N. of Desert Center (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 37 Transect length: 1.0 mi

GPS Start-point: 11S 0649028 3740084 (easting, northing, elevation in meters) Start time: 0823 [✓ am]/pm

GPS End-point: 11S 0647421 3740054 (easting, northing, elevation in meters) End time: 0857 [✓ am]/pm

Start Temp: 77 °~~C~~F End Temp: 83 °~~C~~F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

BTGN
LBWO

Page: ____ of ____

Transect number: 37

2010 Field Season

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27/5/2011 (day, month, year) Survey biologist(s): Nathan Moorhatch (name, email, and phone number)

Site description: Gravelly/Rocky washes & bajadas dominated by Ironwood, Blue Palo Verde, Creosote outside washes (project name and size; general location)

County: Riverside Quad: ______ Location: 5 mi. N. of Desert Center (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 600SW Transect length: 1.20 mi.

GPS Start-point: 11S 0646835 3740044 218m (easting, northing, elevation in meters) Start time: 0930 [✓ am]/pm

GPS End-point: 11S 0648044 3739122 (easting, northing, elevation in meters) End time: 1015 [✓ am]/pm

Start Temp: 84 °~~C~~F End Temp: 86 °~~C~~F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

ATFL
LENH
BTGN
VERD
TUVU

Aspidoscelis t. tigris
Spermopholis tereticaudus

Dipsosaurus dorsalis
Callisaurus draconoides

Page: _____ of _____

Transect number: 600SW

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27/5/2011 (day, month, year) Survey biologist(s): Nathan Moorhatch (name, email, and phone number)

Site description: Gravelly/rocky washes & bajadas dominated by Ironwood, Blue Palo Verde, w/ Creosote outside washes (project name and size; general location)

County: Riverside Quad: ______ Location: 5 mi. N of Desert Center (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 400SW Transect length: 0.98 mi

GPS Start-point: 11S 0648045 3739306 (easting, northing, elevation in meters) Start time: 10:26 [✓ am]/pm

GPS End-point: 11S 0647034 3740041 (easting, northing, elevation in meters) End time: 10:50 [✓ am]/pm

Start Temp: 87 °~~C~~F End Temp: 88 °~~C~~F

Live Tortoises

Detection number	GPS location Easting	 Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	 Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

VERD

Spermopholis tereticaudus
Dipsosaurus dorsalis
Lepus californicus

Page: ____ of ____

Transect number: 400SW

2010 Field Season

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27/5/2011 (day, month, year) Survey biologist(s): Nathan Moorhatch (name, email, and phone number)

Site description: Gravelly/rocky washes & bajadas dominated by Ironwood, Catclaw, & Palo Verde, Creosote outside washes (project name and size; general location)

County: Riverside Quad: ____ Location: 5 mi. N. of Desert Center (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 200sw Transect length: 0.82 mi

GPS Start-point: 11S 0647230 3740054 (easting, northing, elevation in meters) Start time: 10:55 [✓ am]/pm

GPS End-point: 11S 0648050 3739518 (easting, northing, elevation in meters) End time: 11:17 [✓ am]/pm

Start Temp: 88 °~~C~~F End Temp: 90 °~~C~~F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

Spermophilis tereticaudus
Dipsosaurus dorsalis
BTGN

Page: ____ of ____

Transect number: 200 sw
(201)

2010 Field Season

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27/5/2011 (day, month, year) Survey biologist(s): Nathan Moorhatch (name, email, and phone number)

Site description: (project name and size; general location)

County: Riverside Quad: Location: 5 mi. N. of Desert Center on Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 51 Transect length: 0.75 mi.

GPS Start-point: 11S 0647424 3740196 (easting, northing, elevation in meters) Start time: 12:10 am/[✓ pm]

GPS End-point: 11S 0648628 3740213 203 m (easting, northing, elevation in meters) End time: 12:38 am/[✓ pm]

Start Temp: 96 °~~C~~F End Temp: 100 °~~C~~F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	11S 0648477	3740217	Class 5 Burrow	4 ½ in. H. x ~6 in. Wide (Mike's Pic's - no
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: _____ of _____

Transect number: 51

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27/5/2011 (day, month, year) Survey biologist(s): Nathan Moorhatch (name, email, and phone number)

Site description: (project name and size; general location)

County: Riverside Quad: Location: 5 mi. N. of Desert Center (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 53 Transect length: 0.75 mi

GPS Start-point: 11S 0648627 3740237 (easting, northing, elevation in meters) Start time: 12:48 am/[✓ pm]

GPS End-point: 11S 0647422 3740214 (easting, northing, elevation in meters) End time: 13:23 am/[✓ pm]

Start Temp: 100 °~~C~~F End Temp: 102 °~~C~~F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: ____ of ____

Transect number: 53

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27/5/2011 (day, month, year) Survey biologist(s): Nathan Moorhatch (name, email, and phone number)

Site description: ______ (project name and size; general location)

County: Riverside Quad: ______ Location: 5 mi. N. of Desert Center (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 56 Transect length: 0.75 mi

GPS Start-point: 11S 647422 3740247 212m (easting, northing, elevation in meters) Start time: 13:28 am/[✓ pm]

GPS End-point: 11S 0648627 3740267 203m (easting, northing, elevation in meters) End time: 13:57 am/[✓ pm]

Start Temp: 102 °~~C~~F End Temp: 101 °~~C~~F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: ____ of ____

Transect number: 56

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: May 26, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project north of Desert Center (5 mi N) (project name and size; general location)

County: Riverside Quad: ________ Location: Kaiser Road - South end of parcel (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 1 Transect length: 3/4 mi

GPS Start-point: 11S 0648040/3739706 662 ft (easting, northing, elevation in meters) Start time: 8:15 [✓ am]/pm

GPS End-point: 11S 0649642 / 3739735 618 ft (easting, northing, elevation in meters) End time: 8:51 [✓ am]/pm

Start Temp: 25 °C (77°F) End Temp: 86 °F

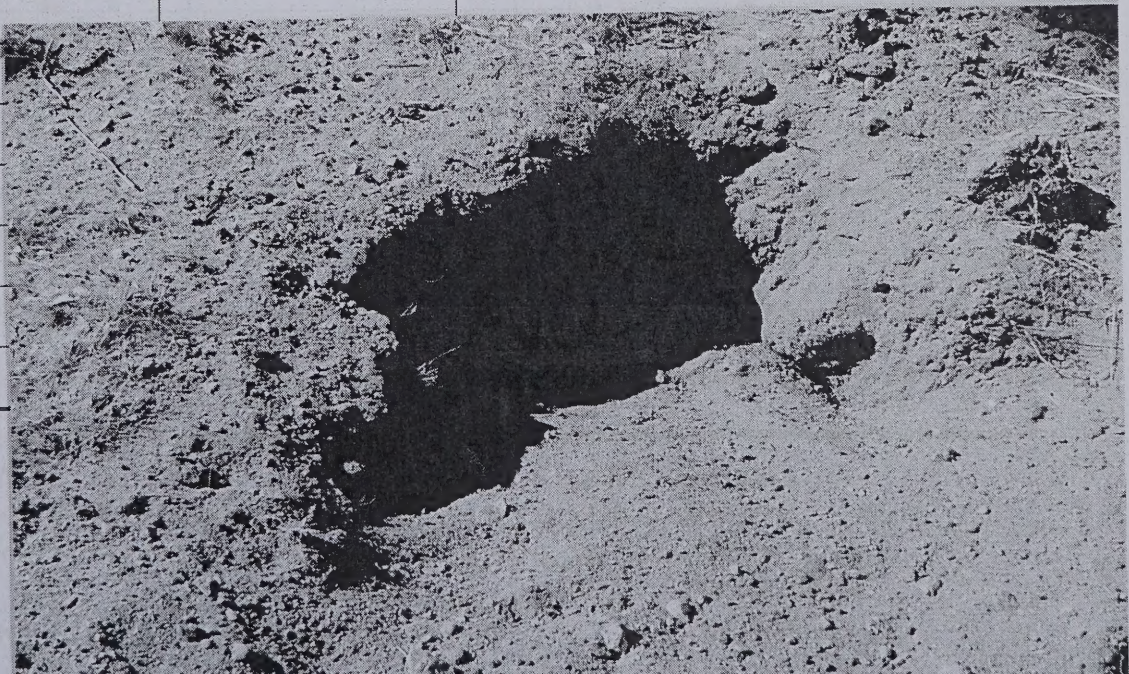
Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1		None				
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	11S 0649198	3739724	Potential DT burrow	Class 5 (good - pot. burrow) WP003 Photo 1
2				
3				
4				
5				
6				
7				
8				

Round-tailed GS
Kit fox tracks



2010 Field Season

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: May 26, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project: north of Desert Center (6 mi N) (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Road area near south end of parcel (UTM coordinates, lat-long, and/or TRS, map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 6 Transect length: 1.4 mi

GPS Start-point: 11S 0649646 / 3739784 618 Ft (easting, northing, elevation in meters) Start time: 9:05 [✓ am]/pm

GPS End-point: 11S 0647428 / 3739745 695 ft (easting, northing, elevation in meters) End time: 10:00 [✓ am]/pm

Start Temp: 86 °F End Temp: 88 °F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1		None				
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1		None		
2				
3				
4				
5				
6				
7				
8				

Zebra-tailed lizard
ash-throated flycatcher
round-tailed ground squirrel
crucifixion thorn CAP CRUX 11S 0647967
(1 Plant) 3739747 Photo 2

Page: 1 of 1

Transect number: 6

2010 Field Season

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: May 26, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project 6 mi N Desert Center (project name and size; general location)

County: Riverside Quad: Location: Kaiser Road area - Near south end of parcel (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 11 Transect length: 1.4 mi

GPS Start-point: 11S 0647427 / 3739798 692 ft (easting, northing, elevation in meters) Start time: 10:13 [✓ am]/pm

GPS End-point: 11S 064.9641 / 3739835 626 ft (easting, northing, elevation in meters) End time: 11:07 [✓ am]/pm

Start Temp: 88 °F End Temp: 92 °F

Live Tortoises

Detection number	GPS location		Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
	Easting	Northing				
1		None				
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (*burrows, scats, carcass, etc*)	Description and comments
	Easting	Northing		
1		None		
2				
3				
4				
5				
6				
7				
8				

RT63
Ash-throated flycatcher
zebra-tailed

Page: 1 of 1

Transect number: 11

2010 Field Season

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: May 26, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project 6 mi N Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd area - near South end of paved (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 257 acres Transect #: 16 Transect length: 1.4 mi

GPS Start-point: 11S 0649640 / 3739884 619 ft (easting, northing, elevation in meters) Start time: 11:24 [✓ am] pm

GPS End-point: 11S 0647426 / 3739845 691 ft (easting, northing, elevation in meters) End time: 12:29 am [✓ pm]

Start Temp: 92 °F End Temp: 92 °F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1		None				
2						
3.						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1		None		
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 16

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: May 26, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project 6 mi N Desert Center (project name and size; general location)

County: Riverside Quad: _____ Location: Kaiser Road Area - southerly portion of parcel (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 Acres Transect #: 21 Transect length: 1.00 mi

GPS Start-point: 11S 0647423 / 3739895 694 ft (easting, northing, elevation in meters) Start time: 12:36 am/pm

GPS End-point: 11S 0649034 / 3739923 649 ft (easting, northing, elevation in meters) End time: 13:05 am/pm

Start Temp: 92 °F End Temp: 93 °F

Live Tortoises

Detection number	GPS location		Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
	Easting	Northing				
1		None				
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (*burrows, scats, carcass, etc*)	Description and comments
	Easting	Northing		
1		NONE		
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 21

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: May 26, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project 6 mi N Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd Area - Southerly portion of parcel (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 Ac. Transect #: 26 Transect length: 1.0 Mi

GPS Start-point: 11S 0649029 / 3739973 649 ft (easting, northing, elevation in meters) Start time: 1:15 am [✓ pm]

GPS End-point: 11S 0647421 / 3739945 696 ft (easting, northing, elevation in meters) End time: 2:00 am/pm

Start Temp: 93 °F End Temp: 100 °F

2010 Field Season

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1		None				
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1		None		
2				
3				
4				
5				
6				
7				
8				

black-tailed jackrabbit
desert iguana
western whiptail

Page: 1 of 1

Transect number: 26

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: May 26, 2010 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project 6 mi N Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Kaiser Rd Area - southerly portion of parcel (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 257 Ac Transect #: 31 Transect length: 0.4 miles

GPS Start-point: 11S 0647420/3739995 696 Ft (easting, northing, elevation in meters) Start time: 2:08 am/pm

GPS End-point: 11S 0648051 / 3740025 (easting, northing, elevation in meters) End time: 2:19 pm am/pm

Start Temp: 100 °F End Temp: 100° F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1	None					
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	None			
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 31

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: May 27, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project 6 Mi N Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Off Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 31E Transect length: 0.8 mi

GPS Start-point: 11S 0648051 / 3740005 666 ft (easting, northing, elevation in meters) Start time: 7:45AM [✓ am] pm

GPS End-point: 11S 0649029 / 3740025 633 ft (easting, northing, elevation in meters) End time: 8:08 [✓ am] pm

Start Temp: 77 °F End Temp: 77 °F

Live Tortoises

Detection number	GPS location		Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (*burrows, scats, carcass, etc*)	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

Shovel-nosed snake tracks

Page: 1 of 1

Transect number: 31E

2010 Field Season

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: May 27, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project 6 mi N Desert Center (project name and size; general location)

County: Riverside Quad: ____ Location: Off Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 36 Transect length: 1.00 mi

GPS Start-point: 11S 0649028 / 3740095 639 ft (easting, northing, elevation in meters) Start time: 8:20 [✓ am] pm

GPS End-point: 11S 0647425 / 3740643 690 ft (easting, northing, elevation in meters) End time: 8:57 [✓ am] pm

Start Temp: 77 °F End Temp: 83 °F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1		None				
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1		None		
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Black-tailed gnatcatcher

Page: 1 of 1

Transect number: 36

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: May 27, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project 6 mi N Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: off Kaiser Rd Buffr 200E (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: B200E Transect length: ≈2.5 mi

GPS Start-point: 11S 0648060 / 3739505 672ft (easting, northing, elevation in meters) Start time: 9:30 [✓ am]/pm

GPS End-point: 11S 0648035 / 3740503 667 ft (easting, northing, elevation in meters) End time: 10:46 [✓ am]/pm

Start Temp: 84 °F End Temp: 93 °F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1	None					
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	None			
2				
3				
4				
5				
6				
7				
8				

desert iguana zebra-tailed lizard
whiptail
RTGS
ash-throated flycatcher

Page: 1 of 1

Transect number: 20I
200M E

2010 Field Season

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: May 27, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project 6 mi N Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Off Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 400E Transect length: ≅ 3.25 mi

GPS Start-point: N 33.78356 / W -115.40084 (easting, northing, elevation in meters) Start time: 11:55 [✓ am]/pm

GPS End-point: N 33.79774 / W -115.40173 (easting, northing, elevation in meters) End time: 1:20 am/[✓ pm]

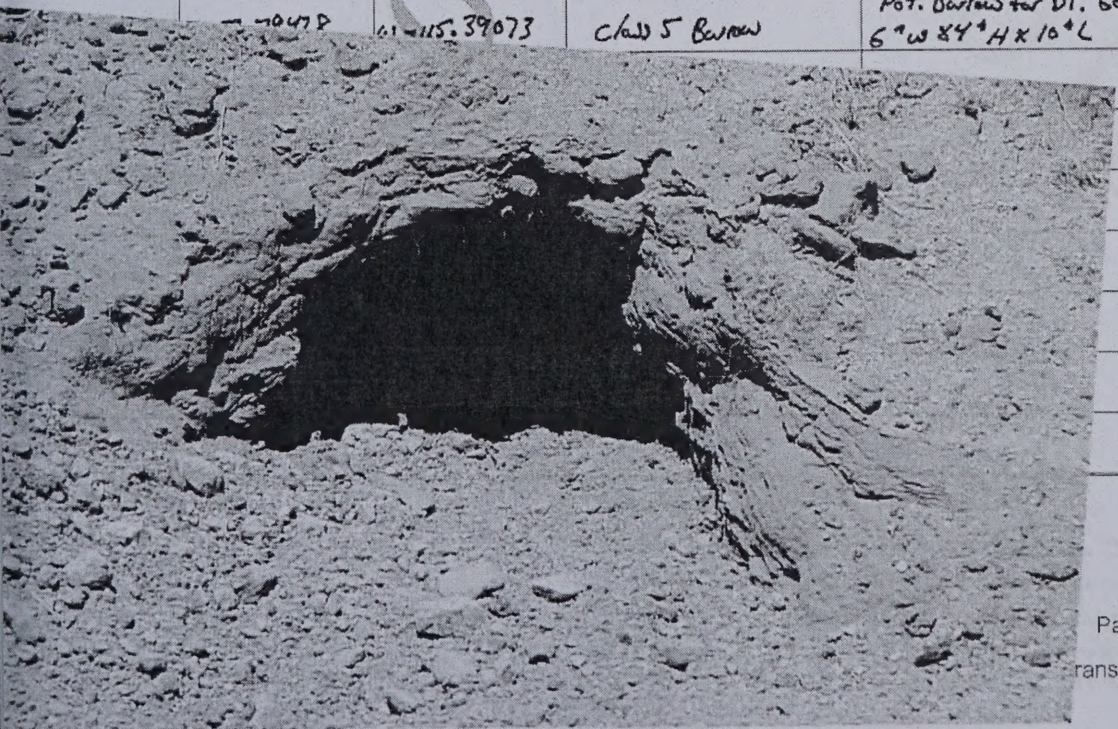
Start Temp: 94 °F End Temp: 98 °F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1	None					
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (burrows, scats, carcass, etc)	Description and comments
	70478	W -115.39073	Class 5 Burrow	Pot. Burrow for DT. Good condition - no sign. 6"W x 4"H x 10"L WP005. Single photo



Page: 1 of 1

ransect number: 400E

20I

Field Season

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: May 28, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project 6 mi N Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: off Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 600E Transect length: ≅ 2

GPS Start-point: 11S 0647937/3741075 652ft (easting, northing, elevation in meters) Start time: 6:09 [✓ am]/pm

GPS End-point: 11S 0648066/3739091 658ft (easting, northing, elevation in meters) End time: 7:38 [✓ am]/pm

Start Temp: 76 °F End Temp: 78 °F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1	None					
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	None			
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

NOTE: Long transect – divided into 2 segments
I walked the "northern", heading east
for about 2 miles, starting at the junction
w/ Kaiser Road. Then walked out with the
other biologist (Sigay), ending at Kaiser Road
at the intersection of the "southern" segment.

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Transect number: 600 E

20I

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: May 27, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project 6 mi N Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: off Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 60 Transect length: 0.75 mi

GPS Start-point: 11S 0648629 / 3740305 670 ft (easting, northing, elevation in meters) Start time: 2:05 am [✓ pm]

GPS End-point: 11S 0647423 / 3740285 706 F (easting, northing, elevation in meters) End time: 2:28 am [✓ pm]

Start Temp: 107 °F End Temp: 99 °F

Live Tortoises

Detection number	GPS location		Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
	Easting	Northing				
1		None				
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (*burrows, scats, carcass, etc*)	Description and comments
	Easting	Northing		
1		None		
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 60

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: May 27, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project 6 mi N Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Off Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 62 Transect length: 0.25

GPS Start-point: 11S 0647423/3740307 706 ft (easting, northing, elevation in meters) Start time: 2:40 am [✓ pm]

GPS End-point: 11S 0647823/3740313 687 ft (easting, northing, elevation in meters) End time: 2:50 am [✓ pm]

Start Temp: 99 °F End Temp: 99 °F

2010 Field Season

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1		None				
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1		None		
2				
3				
4				
5				
6				
7				
8				

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Transect number: 62

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: May 27, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project 6 mi N Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Off Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 64 Transect length: 0.25 mi

GPS Start-point: 11S 0647825/3740333 687ft (easting, northing, elevation in meters) Start time: 2:54 am [✓ pm]

GPS End-point: 11S 0647423/3740325 700ft (easting, northing, elevation in meters) End time: 3:01 am [✓ pm]

Start Temp: 99 °F End Temp: 101 °F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1	None					
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	None			
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

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Transect number: 64

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

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Date of survey: May 27, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project 6 mi N Desert Center (project name and size; general location)

County: Riverside Quad: ________ Location: off Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 66 Transect length: 0.25 mi

GPS Start-point: 11S 0647422 / 3740346 700 ft (easting, northing, elevation in meters) Start time: 3:08 am [✓ pm]

GPS End-point: 11S 0647826 / 3740353 686 ft (easting, northing, elevation in meters) End time: 3:15 am [✓ pm]

Start Temp: 101 °F End Temp: 101 °F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1		None				
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1		None		
2				
3				
4				
5				
6				
7				
8				

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Transect number: 66

2010 Field Season

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

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Date of survey: May 27, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project 6 mi N Desert Center (project name and size; general location)

County: Riverside Quad: ____ Location: Off Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: ____ Transect #: 68 Transect length: 0.25

GPS Start-point: 11S 0647826/3740374 686 ft (easting, northing, elevation in meters) Start time: 3:20 am/[✓ pm]

GPS End-point: 11S06 47421/3740368 697 ft (easting, northing, elevation in meters) End time: 3:27 am/[✓ pm]

Start Temp: 101 °F End Temp: 103 °F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1	None					
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	None			
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

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Transect number: 68

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: May (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project 6 mi N Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Off Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100%] coverage or Sampling Area size to be surveyed: 257 ac. Transect #: 70 Transect length: 0.25 mi

GPS Start-point: 115 0647423 / 3740386 697 ft (easting, northing, elevation in meters) Start time: 3:34 am/[✓ pm]

GPS End-point: 115 0647824 / 3740394 692 ft (easting, northing, elevation in meters) End time: 3:42 am/[✓ pm]

Start Temp: 103 °F End Temp: 103 °F

Live Tortoises

Detection number	GPS location		Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1	None					
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (*burrows, scats, carcass, etc*)	Description and comments
	Easting	Northing		
1	None			
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

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Transect number: 70

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: May 8, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Hot Springs 6 mi N Desert Center (project name and size; general location)

County: Riverside Quad: ____ Location: Off Kaiser Rd. (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 72 Transect length: 0.25 mi

GPS Start-point: 11S 0647824 / 3740413 668 ft (easting, northing, elevation in meters) Start time: 8:06 [✓ am]/pm

GPS End-point: 11S 0647425 / 3740408 683 ft (easting, northing, elevation in meters) End time: 8:15 [✓ am]/pm

Start Temp: 83 °F End Temp: 83 °F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1	None					
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	None			
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

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Transect number: 72

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: May 28, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project 6 Mi N Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Off Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 74 Transect length: 0.25 mi

GPS Start-point: 115 0647423 / 3740426 687 ft (easting, northing, elevation in meters) Start time: 8:20 [✓ am]/pm

GPS End-point: 115 0647825 / 3740480 666 ft (easting, northing, elevation in meters) End time: 8:27 [✓ am]/pm

Start Temp: 83 °F End Temp: 83 °F

Live Tortoises

Detection number	GPS location		Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1	None					
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (*burrows, scats, carcass, etc*)	Description and comments
	Easting	Northing		
1	None			
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

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Transect number: 74

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: May 28, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project 6 mi N Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Off Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100%] coverage or Sampling Area size to be surveyed: 257 acres Transect #: 76 Transect length: 0.25 mi

GPS Start-point: 11S 0647821/3740451 664 ft (easting, northing, elevation in meters) Start time: 8:32 [✓ am] pm

GPS End-point: 11S 0647821/3740447 683° Ft (easting, northing, elevation in meters) End time: 8:39 [✓ am] pm

Start Temp: 82 °F End Temp: 85 °F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1	None					
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	None			
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

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Transect number: 76

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

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Date of survey: May. 28, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project 6 mi N Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: off Kaiser Road (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 78 Transect length: 0.25 mi

GPS Start-point: 11S 0647422/3740467 688 ft (easting, northing, elevation in meters) Start time: 8:46 [✓ am]/pm

GPS End-point: 11S 0647824 / 3740473 667 ft (easting, northing, elevation in meters) End time: 8:54 [✓ am]/pm

Start Temp: 85 °F End Temp: 85 °F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1	None					
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	None			
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

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Transect number: 78

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

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Date of survey: May 28, 2011 (day, month, year) Survey biologist(s): Ted Rado (name, email, and phone number)

Site description: Desert Harvest Project 6 mi N Desert Center (project name and size; general location)

County: Riverside Quad: ______ Location: Off Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling, Area size to be surveyed: 257 acres Transect #: 80 Transect length: 0.25 mi

GPS Start-point: 11S 0647822 / 3740494 670 ft (easting, northing, elevation in meters) Start time: 8:58 [✓ am]/pm

GPS End-point: 11S 0647427 / 3740486 684 ft (easting, northing, elevation in meters) End time: 9:06 [✓ am]/pm

Start Temp: 85 °F End Temp: 87 °F

2010 Field Season

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1	None					
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	None			
2				
3				
4				
5				
6				
7				
8				

NOTE: Took photo of NE corner boundary stake

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Transect number: 80

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Site description: Desert Harvest Project 6 mi N Desert Center (project name and size, general location)

County: Riverside Quad: ______ Location: off Kaiser Rd (UTM coordinates, lat-long, and/or TRS, map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: ______ Transect #: 10W Transect length: 0.38 mi

GPS Start-point: 11S [redacted] 0648137/3739795/664 ft (easting, northing, elevation in meters) Start time: 9:40 [✓ am]/pm

GPS End-point: 11S 0647426/3739783 686 ft (easting, northing, elevation in meters) End time: 9:54 [✓ am]/pm

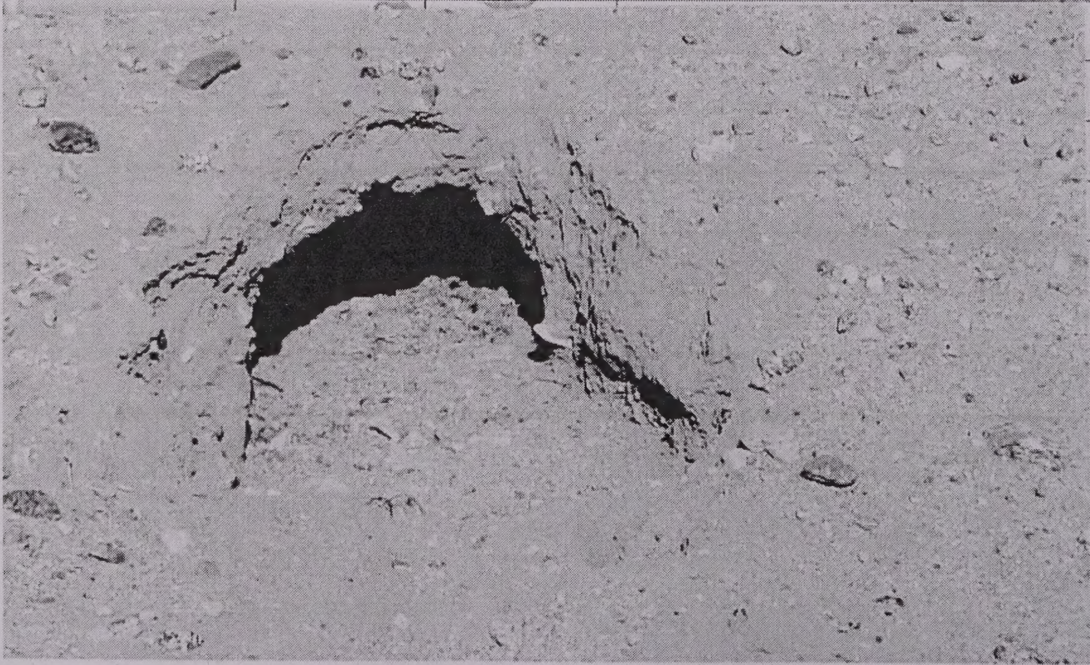
Start Temp: 91 °F End Temp: 92 °F

Live Tortoises

Detection number	GPS location Easting	 Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1	None					
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	 Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	11S 0647841	3739800	class 5 burrow	Fair condition - no sign - possibly DT Photo Taken WP006



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Transect number: 10W

o Field Season

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Site description: Desert Harvest Project 6 mi N Desert Center (project name and size; general location)

County: Riverside Quad: Location: off Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 1W Transect length: 0.38 mi

GPS Start-point: 11S 0648042 / 3739706 666 ft (easting, northing, elevation in meters) Start time: 10:15 [✓ am]/pm

GPS End-point: 11S 0647427 / 3739697 684 ft (easting, northing, elevation in meters) End time: 10:25 [✓ am]/pm

Start Temp: 92 °F End Temp: 92 °F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1	None					
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	None			
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

NOTE: 2 crucifixion thorns just south
of boundary. WP 010
11S 0647981/3739665
Photo

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Transect number: 1W

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

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Site description: Desert Harvest Project (project name and size; general location)

County: Riverside Quad: ______ Location: Off Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 acres Transect #: 3W Transect length: 0.38 mi

GPS Start-point: 11S 0647425/373918 685 ft (easting, northing, elevation in meters) Start time: 10:34 [✓ am] pm

GPS End-point: 11S 0648041/3739729 664 ft (easting, northing, elevation in meters) End time: 10:50 [✓ am] pm

Start Temp: 93 °F End Temp: 93 °F

Live Tortoises

Detection number	GPS location Easting	 Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	 Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

WP 008 - 1 Crucifixion thorn
11S 0647969
3739746 (Transect 4W)
1 Photo

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Transect number: 3W

2010 Field Season

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

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Date of survey: May 28, 2011 (day, month, year) Survey biologist(s): Ted Rado + Tsegaye Mengistu (name, email, and phone number)

Site description: Desert Harvest Project (project name and size; general location)

County: Riverside Quad: ____ Location: off Kaiser Rd (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: ____ Transect #: 5W Transect length: 0.38

GPS Start-point: 11S 0648637/3739745 663 ft (easting, northing, elevation in meters) Start time: 11:02 [✓ am]/pm

GPS End-point: 11S 0647427/3739736 684 ft (easting, northing, elevation in meters) End time: 11:13 [✓ am]/pm

Start Temp: 93 °F End Temp: 93 °F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1	None					
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	None			
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

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Transect number: 5W

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completicn

Date of survey: 26 MAY 11 (day, month, year) Survey biologist(s): michael.wilcox@amec.com (name, email, and phone number)

Site description: DESERT HARVEST, 257 ACRES, ~5 mi N DESERT CTR. (project name and size, general location)

County: RIVERSIDE Quad: VICTORY PASS Location: T4S, R15E, S26&27 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 AC. Transect #: 3 Transect length: 1.5 mi

GPS Start-point: N33.78735°, W115.40079, 662' (easting, northing, elevation in meters) Start time: 0815 am/pm

GPS End-point: N33.78735, W115.38367, 618' (easting, northing, elevation in meters) End time: 0851 am/pm

Start Temp: 80 °F End Temp: 86 °F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

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Transect number: 3

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 26 MAY 11 (day, month, year) Survey biologist(s): michael.wilcox@amec.com (name, email, and phone number)

Site description: DESERT HARVEST, 257 ACRES, ~5 mi N DESERT CTR. (project name and size, general location)

County: RIVERSIDE Quad: VICTORY PASS Location: T4S, R15E, S26&27 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257AC. Transect #: 8 Transect length: 1.5mi

GPS Start-point: N33.78783°, W115.38370°, 695' (easting, northing, elevation in meters) Start time: 0900 am/pm

GPS End-point: N33.78783°, W115.40759°, 695' (easting, northing, elevation in meters) End time: 1000 am/pm

Start Temp: 86 °F End Temp: 88 °F

Live Tortoises

Detection number	GPS location		Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (*burrows, scats, carcass, etc*)	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

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Transect number: 8

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

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Date of survey: 26 MAY 11 (day, month, year) Survey biologist(s): michael.wilcox@amec.com (name, email, and phone number)

Site description: DESERT HARVEST, 257 ACRES, ~5 mi N DESERT CTR. (project name and size, general location)

County: RIVERSIDE Quad: VICTORY PASS Location: T4S, R15E, S26&27 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257AC. Transect #: 13 Transect length: 1.5mi

GPS Start-point: N33.78825°, W115.40764°, 695' (easting, northing, elevation in meters) Start time: 1013 am/pm

GPS End-point: N33.78825°, W115.38358°, 626' (easting, northing, elevation in meters) End time: 1107 am/pm

Start Temp: 88 °F End Temp: 92 °F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	W115.38881°	N33.78827°	POTENTIAL DT BURROW	CLASS 5, ASSOCIATED W/ LARGE SMALL MAMMAL BURROW COMPLE
2				(GPS PT. "POTB1")
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 13

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 26 MAY 11 (day, month, year) Survey biologist(s): michael.wilcox@amec.com (name, email, and phone number)

Site description: DESERT HARVEST, 257 ACRES, ~5 mi N DESERT CTR. (project name and size, general location)

County: RIVERSIDE Quad: VICTORY PASS Location: T4S, R15E, S26&27 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 AC. Transect #: 18 Transect length: 1.4 mi

GPS Start-point: 0649638, 3739904, 619' (easting, northing, elevation in meters) Start time: 11:24 [✓ am] pm

GPS End-point: 0647424, 3739865, 691' (easting, northing, elevation in meters) End time: 12:29 am [✓ pm]

Start Temp: 92 °F End Temp: 92 °F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 18

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completicn

Date of survey: 26 MAY 11 (day, month, year) Survey biologist(s): michael.wilcox@amec.com (name, email, and phone number)

Site description: DESERT HARVEST, 257 ACRES, ~5 mi N DESERT CTR. (project name and size, general location)

County: RIVERSIDE Quad: VICTORY PASS Location: T4S, R15E, S26 & 27 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 AC. Transect #: 23 Transect length: 1 mi

GPS Start-point: 0649030, 3739943, 691′ (easting, northing, elevation in meters) Start time: 12:36 am [✓ pm]

GPS End-point: 0647423, 3739915, 650′ (easting, northing, elevation in meters) End time: 1:03 am [✓ pm]

Start Temp: 92 F End Temp: 93 F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 23

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 26 MAY 11 (day, month, year) Survey biologist(s): michael.wilcox@amec.com (name, email, and phone number)

Site description: DESERT HARVEST, 257 ACRES, ~5 mi N DESERT CTR. (project name and size, general location)

County: RIVERSIDE Quad: VICTORY PASS Location: TAS, R15E, S26&27 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 AC. Transect #: 28 Transect length: 1 mi

GPS Start-point: 0649030, 3739993, 649' (easting, northing, elevation in meters) Start time: 1:15 am [✓ pm]

GPS End-point: 0647422, 3739965, 697' (easting, northing, elevation in meters) End time: 2:00 am [✓ pm]

Start Temp: 93 °F End Temp: 100 °F

2010 Field Season

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

Page: 1 of 1

Transect number: 28

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 26 MAY 11 (day, month, year) Survey biologist(s): michael.wilcox@amec.com (name, email, and phone number)

Site description: DESERT HARVEST, 257 ACRES, ~5 mi N DESERT CTR. (project name and size, general location)

County: RIVERSIDE Quad: VICTORY PASS Location: T4S, R15E, S26&27 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 AC. Transect #: 33W Transect length: 0.4 mi

GPS Start-point: 0647421, 3740015, 697' (easting, northing, elevation in meters) Start time: 2:08 am [✓ pm]

GPS End-point: 0648048, 3740027 (easting, northing, elevation in meters) End time: 2:30 am [✓ pm]

Start Temp: 100 °F End Temp: 100 °F

2010 Field Season

Live Tortoises

Detection number	GPS location		Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location		Type of sign (*burrows, scats, carcass, etc*)	Description and comments
	Easting	Northing		
1				
2				
3				
4				
5				
6				
7				
8				

Page: 1 of 1

Transect number: 33W

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27 MAY 11 (day, month, year) Survey biologist(s): michael.wilcox@amec.com (name, email, and phone number)

Site description: DESERT HARVEST, 257 ACRES, ~5 mi N DESERT CTR. (project name and size, general location)

County: RIVERSIDE Quad: VICTORY PASS Location: T4S, R15E, S26&27 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 AC. Transect #: 33E Transect length: .6 mi

GPS Start-point: 0648047, 3740026, 666' (easting, northing, elevation in meters) Start time: 7:45 [✓ am]/pm

GPS End-point: 0649028, 3740043, 633' (easting, northing, elevation in meters) End time: 8:08 [✓ am]/pm

Start Temp: 74 °F End Temp: 77 °F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 33E

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27 MAY 11 (day, month, year) Survey biologist(s): michael.wilcox@amec.com (name, email, and phone number)

Site description: DESERT HARVEST, 257 ACRES, ~5 mi N DESERT CTR. (project name and size, general location)

County: RIVERSIDE Quad: VICTORY PASS Location: T4S, R15E, S26&27 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: 100% coverage or Sampling Area size to be surveyed: 257AC. Transect #: 38 Transect length: 1 MI

GPS Start-point: 0649028, 3740093, 637' (easting, northing, elevation in meters) Start time: 8:20 [✓ am]/pm

GPS End-point: 0647423, 3740065, 690' (easting, northing, elevation in meters) End time: 8:57 [✓ am]/pm

Start Temp: 77 °F End Temp: 83 °F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 38

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27 MAY 11 (day, month, year) Survey biologist(s): michael.wilcox@amec.com (name, email, and phone number)

Site description: DESERT HARVEST, 257 ACRES, ~5 mi N DESERT CTR. (project name and size, general location)

County: RIVERSIDE Quad: VICTORY PASS Location: T4S, R15E, S26&27 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257AC. Transect #: 41 Transect length: .75mi

GPS Start-point: 0647420, 3740095, 210M. (easting, northing, elevation in meters) Start time: 9:15 [✓ am]/pm

GPS End-point: 0648628, 3740016, 199M. (easting, northing, elevation in meters) End time: 9:50 [✓ am]/pm

Start Temp: ______ °C End Temp: ______ °C

2010 Field Season

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

Page: 1 of 1

Transect number: 41

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27 MAY 11 (day, month, year) Survey biologist(s): michael.wilcox@amec.com (name, email, and phone number)

Site description: DESERT HARVEST, 257 ACRES, ~5 mi N DESERT CTR. (project name and size, general location)

County: RIVERSIDE Quad: VICTORY PASS Location: T4S, R15E, S26&27 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 AC. Transect #: 43 Transect length: .75 mi

GPS Start-point: 0648630, 3740138 (easting, northing, elevation in meters) Start time: 9:55 [✓ am]/pm

GPS End-point: 0647423, 3740116, 210 m. (easting, northing, elevation in meters) End time: 10:35 [✓ am]/pm

Start Temp: 86 °F End Temp: 89 °F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 43

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27 MAY 11 (day, month, year) Survey biologist(s): michael.wilcox@amec.com (name, email, and phone number)

Site description: DESERT HARVEST, 257 ACRES, ~5 mi N DESERT CTR. (project name and size; general location)

County: RIVERSIDE Quad: VICTORY PASS Location: T4S, R15E, S26&27 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one [✓ 100% coverage] or Sampling Area size to be surveyed: 257AC. Transect #: 45 Transect length: 75 mi

GPS Start-point: 0647423, 3740135, 210m. (easting, northing, elevation in meters) Start time: 10:40 [✓ am]/pm

GPS End-point: 0648629, 3740157, 197m. (easting, northing, elevation in meters) End time: 11:05 [✓ am]/pm

Start Temp: 89 °F End Temp: 90 °F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	0647814	3740141	BURROW (PALLET ~12"d)	CLASS 5, POSS. DT, GOOD COND. ~7"W X 3"T X 12"d "DTBCLASS5"
2				2 PICS GPS SIDE
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 45

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27 MAY 11 (day, month, year) Survey biologist(s): michael.wilcox@amec.com (name, email, and phone number)

Site description: DESERT HARVEST, 257 ACRES, ~5 mi N DESERT CTR. (project name and size; general location)

County: RIVERSIDE Quad: VICTORY PASS Location: T4S, R15E, S26&27 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 AC. Transect #: 47 Transect length: .75 mi

GPS Start-point: 0648628, 3740176, 197 m. (easting, northing, elevation in meters) Start time: 11:15 [✓ am]/pm

GPS End-point: 0647425, 3740155, 209 m. (easting, northing, elevation in meters) End time: 12:04 am/[✓ pm]

Start Temp: 90 °F End Temp: 96 °F

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1	0648537	3740177	burrow	CLASS 5, ~5"W x 2.5"T x ?" Dtbclass5a (~2 pics - GPS top)
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 47

USFWS 2010 DESERT TORTOISE PRE-PROJECT SURVEY DATA SHEET

Please submit a completed copy to the action agency and local USFWS office within 30-days of survey completion

Date of survey: 27 MAY 11 (day, month, year) Survey biologist(s): michael.wilcox@amec.com (name, email, and phone number)

Site description: DESERT HARVEST, 257 ACRES, ~5 mi N DESERT CTR. (project name and size, general location)

County: RIVERSIDE Quad: VICTORY PASS Location: T4S, R15E, S26&27 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: [✓ 100% coverage] or Sampling Area size to be surveyed: 257 AC. Transect #: 49 Transect length: .75 mi

GPS Start-point: 0647422, 3740174 (easting, northing, elevation in meters) Start time: 12:10 am [✓ pm]

GPS End-point: 0648629, 3740196, 203 m. (easting, northing, elevation in meters) End time: 12:38 am [✓ pm]

Start Temp: 96 °F End Temp: 100 °F

Live Tortoises

Detection number	GPS location Easting	GPS location Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL >160-mm? (Yes, No or Unknown)	Existing tag # and color, if present
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	GPS location Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				

2010 Field Season

Page: 1 of 1

Transect number: 49

Appendix C.3

Final Spring 2010 Focused Special-Status Plant Species Surveys

FINAL
SPRING 2010 FOCUSED SPECIAL-STATUS PLANT SPECIES SURVEYS DESERT HARVEST PROJECT RIVERSIDE COUNTY, CALIFORNIA

Submitted to:
Aspen Environmental Group
235 Montgomery Street, No.935
San Francisco CA 94104

Submitted by:
AMEC Earth & Environmental, Inc.
3120 Chicago Avenue, Suite 110
Riverside, California
(951) 369-8060
Contact: Shari Norton
shari.norton@amec.com

15 April 2011

AMEC 1055400425

EXECUTIVE SUMMARY

AMEC Earth & Environmental, Inc. (AMEC) conducted surveys for special-status plant species between 12-17 April and 7 May 2010 for the proposed Desert Harvest Project, located in unincorporated eastern Riverside County, California. The 1,057-acre project site, which is located on lands administered by the Bureau of Land Management (BLM), is proposed to be the location of a 100-150 mega-watt photovoltaic panel solar power plant. This report, contracted to AMEC by Aspen Environmental Group (Aspen), presents the results of AMEC's field surveys for rare plants that have potential to occur within the area.

Based upon review of available literature and database, and local experts, 19 special-status plant species were identified to have the potential to occur within the vicinity of the proposed project (Appendix A). However, based on literature review and field survey results, these species are considered unlikely to occur primarily due to lack of suitable habitat, or if suitable habitat was present within the site, the species was unlikely to occur as it was not identified during the blooming period when it would be most identifiable.

One federally listed endangered plant, Coachella Valley milk vetch (*Astragalus lentiginosus* var. *coachellae)*, has been reported from the project vicinity. No state or federally listed threatened or endangered species or BLM-designated sensitive species were located on the project site.

Two special-status plant species were observed during the focused survey: Emory's crucifixion thorn (*Castela emoryi*), and Utah vine milkweed (*Funastrum* [=*Cynanchum*] *utahense*). Emory's crucifixion is on CNPS List 2.3 (rare, threatened, or endangered in California, but more common elsewhere). Two individuals of this species were observed within the southwestern portion of the project area within Creosote Bush-White Burr Sage Scrub habitat. Utah vine milkweed is on CNPS List 4.2 (limited distribution; watch list). Three individuals of Utah vine milkweed were observed within the western portion of the project area within Creosote Bush-White Burr Sage Scrub habitat. Individuals of both species appeared healthy, with no evidence of drought stress, chlorosis, necrosis, or herbivory.

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APPENDIXC REPRESENTATIVE SITE PHOTOGRAPHS

ACRONYMS AND ABBREVIATIONS

ACEC	Area of Critical Environmental Concern
amsl	above mean sea level
Aspen	Aspen Environmental Group
BLM	Bureau of Land Management
CDFG	California Department of Fish and Games
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
enXco	enXco Development Corporation
ESA	Federal Endangered Species Act
ft	feet
GIS	Geographical Information System
m	meters
NECO	Northern and Eastern Colorado Desert Coordinated Management Plan (BLM and CDFG, 2002)
GPS	Global Positioning System
MW	mega-watt
PV	photovoltaic

1.0 INTRODUCTION

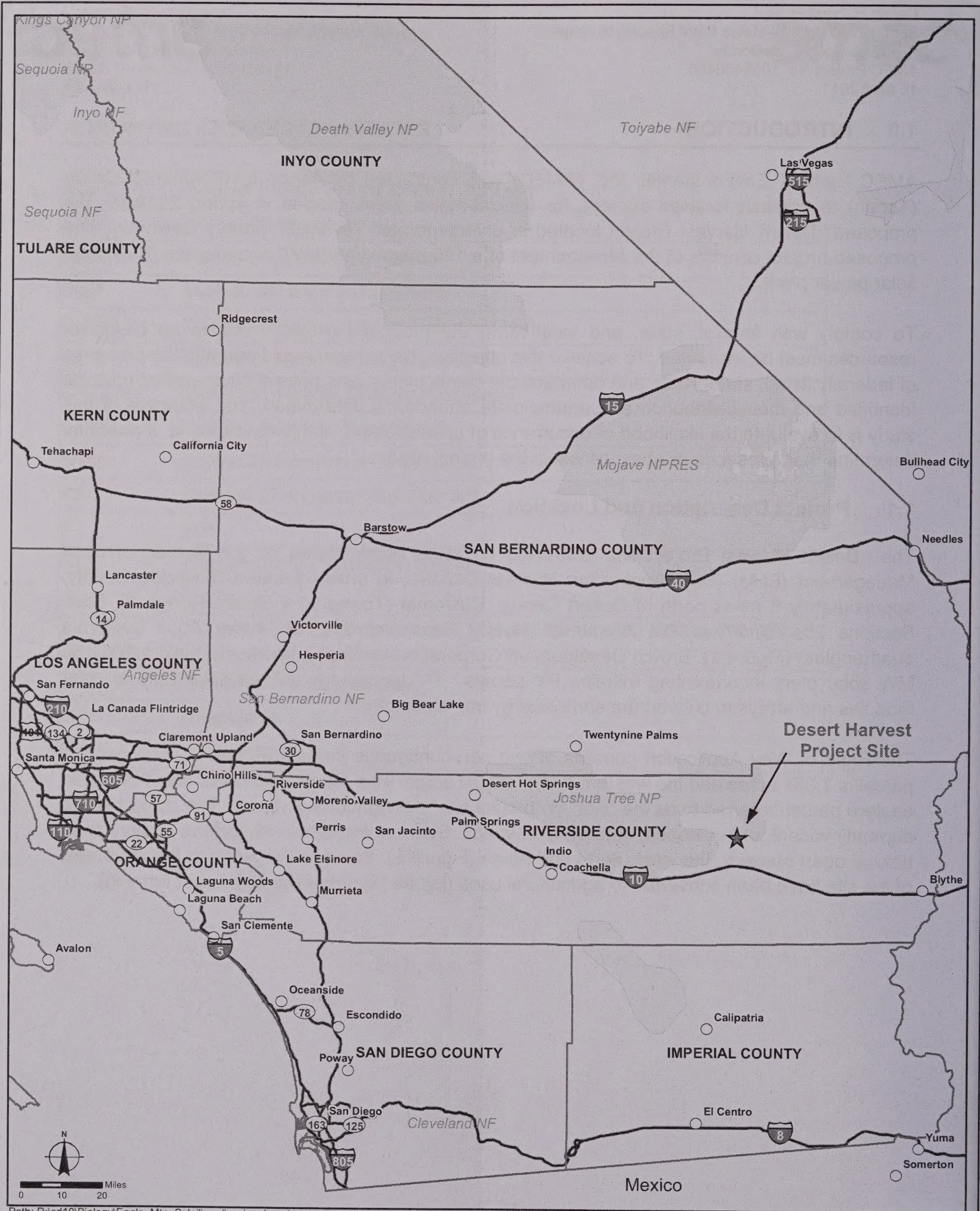
AMEC Earth & Environmental, Inc. (AMEC) was contracted by Aspen Environmental Group (Aspen) to conduct focused surveys for special-status plant species in spring 2010 for the proposed Desert Harvest Project located in unincorporated Riverside County California. The proposed project consists of the development of a 150 mega-watt (MW) photovoltaic (PV) panel solar power plant.

To comply with federal, state, and local laws, the proposed project's effects on biological resources must be evaluated. To achieve this objective, the presence and potential for presence of federally listed, state-listed, and other special-status plants, and natural communities must be identified and their distribution and approximate abundance determined. The objective of this study is to evaluate the likelihood of occurrence of special-status plants species and, if possible, determine their presence or absence within the project area.

1.1 Project Description and Location

The Desert Harvest Project site is located on lands administered by the Bureau of Land Management (BLM) (BLM Application Number 049491) in unincorporated Riverside County, approximately 6 miles north of Desert Center, California (Township 4 South, Range 15 East, Sections 25, 26, 27, USGS 7.5-minute *Victory Pass* and *East of Victory Pass* California quadrangles) (Figure 1). EnXco Development Corporation (enXco) proposes to build a 100-150 MW solar plant incorporating thin-film PV panels. PV technology utilizes solar cells in solar modules and arrays to convert the sun's energy into electricity.

The Right of Way Application consists of two non-contiguous parcels (Figure 2). The eastern parcel is 1,057 acres and the western parcel is 270 acres. This report addresses only the larger, eastern parcel, referred to as the "site" or "project site" throughout this report. The project site is currently vacant, undeveloped, natural open space. Surrounding land uses include undeveloped natural open space to the west, north and south (Figure 2). Some of the lands to the southeast of the site have been converted to agricultural uses (jojoba [*Simmondsia chinensis*] farming).



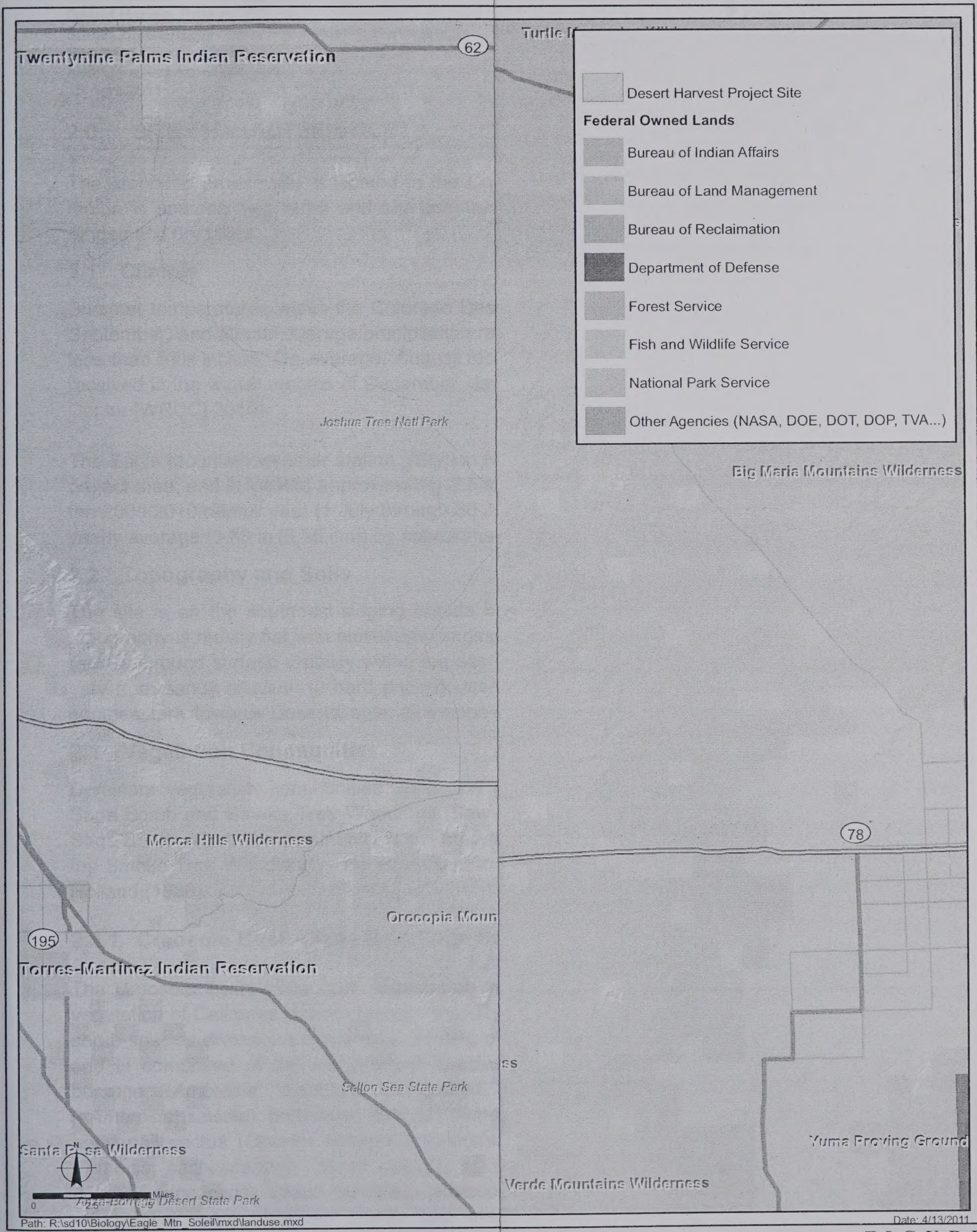
Path: R:\sd10\Biology\Eagle_Mtn_Soleil\mxd\regional.mxd

Date: 4/13/2011

amec

Regional Location
Desert Harvest Project

FIGURE
1


Twentynine Palms Indian Reservation
62
Turtle M
Desert Harvest Project Site
Federal Owned Lands
Bureau of Indian Affairs
Bureau of Land Management
Bureau of Reclamation
Department of Defense
Forest Service
Fish and Wildlife Service
National Park Service
Other Agencies (NASA, DOE, DOT, DOP, TVA...)
Joshua Tree Natl Park
Big Maria Mountains Wilderness
78
Mecca Hills Wilderness
Orocopia Moun
195
Torres-Martinez Indian Reservation
ss
Salton Sea State Park
Yuma Proving Ground
Santa Rosa Wilderness
N
Verde Mountains Wilderness
Miles
0
2.5
5
Anza-Borrego Desert State Park

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Date: 4/13/2011

FIGURE

2

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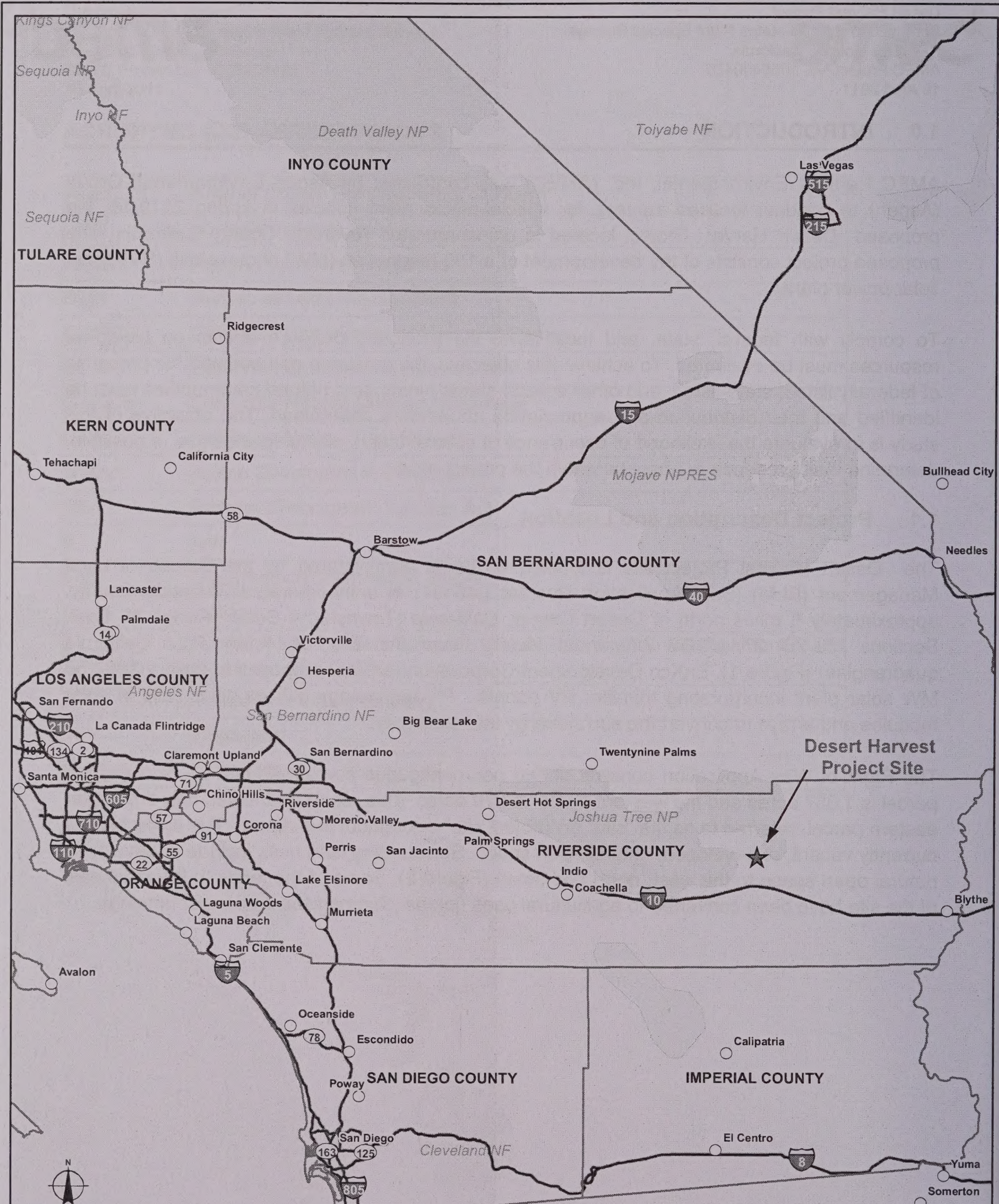

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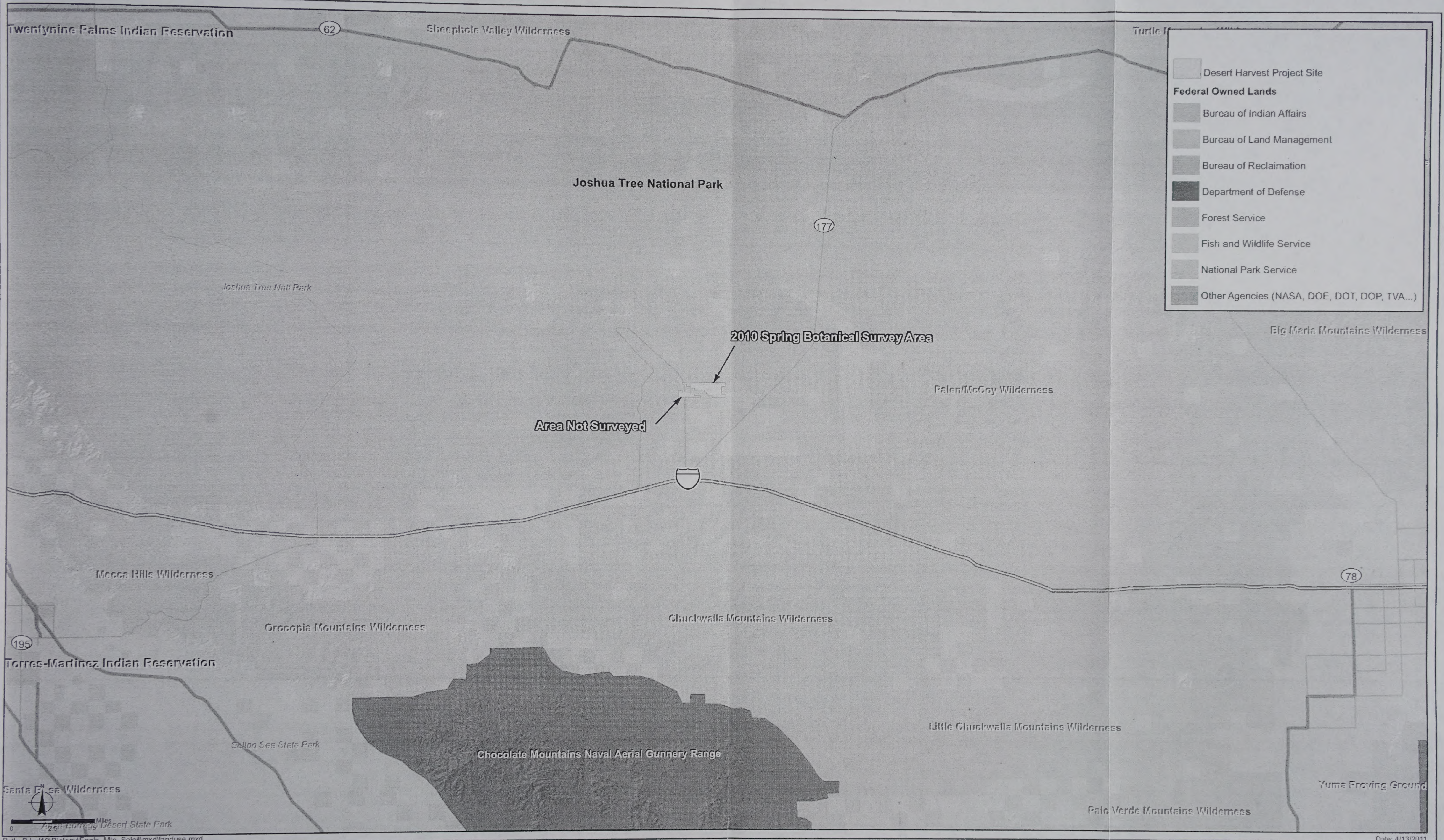
Date: 4/13/2011

Regional Location
Desert Harvest Project

FIGURE

1


Twentynine Palms Indian Reservation
62
Sheephole Valley Wilderness
Turtle
Desert Harvest Project Site
Federal Owned Lands
Bureau of Indian Affairs
Bureau of Land Management
Bureau of Reclaimation
Department of Defense
Forest Service
Fish and Wildlife Service
National Park Service
Other Agencies (NASA, DOE, DOT, DOP, TVA...)
Joshua Tree National Park
177
Joshua Tree Natl Park
Big Maria Mountains Wilderness
2010 Spring Botanical Survey Area
Palen/McCoy Wilderness
Area Not Surveyed
Mecca Hills Wilderness
78
Orocopia Mountains Wilderness
Chuckwalla Mountains Wilderness
195
Torres-Martinez Indian Reservation
Little Chuckwalla Mountains Wilderness
Salton Sea State Park
Chocolate Mountains Naval Aerial Gunnery Range
Santa Rosa Wilderness
N
Yuma Proving Ground
Palo Verde Mountains Wilderness
0
2.5
5
Miles
Anza-Borrego Desert State Park

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Project Location and Land Use
Desert Harvest Project

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FIGURE 2

2.0 SITE CHARACTERISTICS

The proposed project site is located in the Colorado subdivision of the Sonoran Desert. This region is sparsely vegetated and characterized by broad valleys interspersed with mountain ranges and dry lakes.

2.1 Climate

Summer temperatures within the Colorado Desert routinely reach above 100ºF (June through September) and annual average precipitation recorded at the Eagle Mountain weather station is less than four inches. On average, August receives the most rainfall, although rainfall is also received in the winter months of December, January, and February (Western Regional Climate Center [WRCC] 2010).

The Eagle Mountain weather station, (Station No. 042598) is the closest weather station to the project area, and is located approximately 2.5 miles west of the project site. The total rainfall for the 2009/2010 rainfall year (1 July through 30 June) was 5.37 in (13.64 cm), which exceeds the yearly average (3.68 in [9.35 cm]) by approximately 1.69 in (4.29 cm) (WRCC 2010).

2.2 Topography and Soils

The site is on the southeast-sloping bajada below the Eagle and Coxcomb mountains. Site topography is mostly flat with elevations ranging from 583 to 675 feet (ft) above mean sea level (amsl). Ground surface visibility within the site is greater than 80 percent (enXco 2010). Soils vary from sandy alluvium to hard packed desert pavement. Onsite ephemeral drainages flow southeasterly towards Desert Center at a slope of less that 1 percent (enXco 2010).

2.3 Vegetation Communities

Dominant vegetation communities within the project site include Creosote Bush-White Burr Sage Scrub and Smoke Tree Woodland (Sawyer et al. 2009). The Creosote Bush-White Burr Sage Scrub vegetation community is the equivalent to the "Sonoran Creosote Bush Scrub" and the Smoke Tree Woodland is the equivalent to the "Desert Dry Wash Woodland" described by Holland (1986).

2.3.1 Creosote Bush-White Burr Sage Scrub

The Creosote Bush-White Burr Sage Scrub vegetation community is the most characteristic vegetation of California desert communities. This vegetation community is characterized by low shrub species diversity and the wide spacing of the shrubs, usually with bare ground between, and is comprised of the co-dominant species creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*). Associated species include cheesebush (*Hymenoclea* [=*Ambrosia*] salsola), brittlebush (*Encelia farinosa*), pencil cholla (*Cylindropuntia ramosissima*), beavertail cactus (*Opuntia basilaris*), California fagonia (*Fagonia laevis*), and sticky fagonia (*Fagonia pachyacantha*). Many species of seasonal annuals, including desert sunflower (*Geraea canescens*), desert dandelion (*Malacothrix glabrata*), and desert four-spot (*Eremalche rotundifolia*), were observed onsite. The mapped Creosote Bush-White Burr Sage Scrub community also includes small patches of desert pavement with very sparse vegetation cover composed primarily of devil's spineflower (*Chorizanthe rigida*), kidneyleaf buckwheat

(*Eriogonum reniforme*), and Emory's rock daisy (*Perityle emoryi*), with relatively sparse cover of low-statured creosote bush. Creosote Bush-White Burr Sage Scrub is not designated as a high priority natural vegetation community by the California Department of Fish and Game (CDFG 2010c).

Creosote Bush-White Burr Sage Scrub on the site matches the Desert Scrub wildlife habitat described by Laudenslayer and Boggs (1988). It provides habitat for a variety of special-status and common wildlife species including burrowing species such as kangaroo rats (*Dipodomys* spp.), pocket mice (*Perognathus* spp.), and desert cottontail (*Sylvilagus audubonii*); and mesopredators such as desert kit fox (*Vulpes macrotis arsipus*) and coyote (*Canis latrans*). This scrub community also serves as habitat for several species of reptiles including desert iguana (*Dipsosaurus dorsalis*), sidewinder (*Crotalus cerastes*), desert horned lizard (*Phrynosoma platyrhinos*), Great Basin whiptail (*Aspidocelis tigris tigris*), long-nosed leopard lizard (*Gambelia wislizenii*) and zebra-tailed lizard (*Callisaurus draconoides*). Common birds observed within this vegetation community included black-throated sparrow (*Amphispiza bilineata*), verdin (*Auriparus flaviceps*), Gambel's quail (*Callipepla gambelii*), common raven (*Corvus corax*), red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), and cactus wren (*Campylorhynchus brunneicapillus*).

2.3.2 Smoke Tree Woodland

Smoke Tree Woodland occurs throughout the dry washes within the project area and is dominated by ironwood (*Olneya tesota*) and smoketree (*Psorothamnus spinosus*), with blue palo verde (*Parkinsonia florida*), and cat claw acacia (*Acacia greggii*) occurring in lesser numbers. Smoke Tree Woodlands are characterized by the presence of arborescent, often spiny, shrubs generally associated with washes or alluvial deposits adjacent to washes. Plant species in desert wash habitats are generally taller, up to approximately 9m (30 ft) in height, and denser than those of surrounding desert habitats, such as the Creosote Bush-White Burr Sage Scrub, with the height of the wash vegetation proportional to the size of the arroyo (Laudenslayer 1988). The Smoke Tree Woodland on the project site fits this description, with the ironwood, smoketree, and blue palo verde exceeding both the height and density of the surrounding Creosote Bush-White Burr Sage Scrub vegetation community, with many of the individual shrubs of the Smoke Tree Woodland located along the low, vertically-incised banks. This habitat supports a variety of wildlife species, essentially the same species as those occupying the Creosote Bush-White Burr Sage Scrub. This community is ranked by CDFG (2003; 20010c) as a special-status vegetation type, with state rarity ranking of S3. It is one of several communities included within broader vegetation types called desert wash woodland or microphyll woodland (Holland 1986; Schoenherr and Burk 2007).

3.0 SURVEY METHODOLOGY

This section provides an overview of methods used to evaluate special-status botanical resources associated with the project site (Figure 2).

3.1 Pre-Field Survey Methods

3.1.1 Literature and Database Review

Prior to field surveys, a literature review was conducted to identify special-status biological resources known from the vicinity of the project site. For the purpose of this review, "vicinity" includes all areas of the USGS 7.5-minute quadrangle wherein the project occurs and all surrounding quadrangles: *Victory Pass, East of Victory Pass*, *Desert Center*, *Corn Spring, Coxcomb Mountains, Pinto Wells, Placer Canyon, Buzzard Spring, Hayfield Spring, West of Palen Pass, Palen Lake,* and *Sidewinder Well*. The following literature and databases were reviewed:

- CDFG California Natural Diversity Database (CNDDB) version 3.1.1 RareFind3 (CDFG 2010a);
- California Native Plant Society Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2010);
- Eastern Colorado Desert Coordinated Management (NECO) Plan (Bureau of Land Management [BLM] and CDFG 2002);
- List of California BLM Sensitive Plants (BLM 2009).

Based upon review of the literature and database above, and consulting with local experts (Andrew C. Sanders from the UC Riverside Herbarium), nineteen special-status plant species were identified to have the potential to occur within the vicinity of the proposed project (Appendix A). Plant taxa were considered to be special-status species if they were classified as one or more of the following:

- Listed or proposed for listing as threatened or endangered under Endangered Species Act (ESA) or candidates for possible future listing as threatened or endangered under the ESA (50 CFR §17.12);
- Listed or candidates for listing by the State of California as threatened or endangered under CESA (Fish and Game Code §2050 et seq.);
- Listed as BLM Sensitive ("all plant species that are currently on List 1B of the CNPS Inventory of Rare and Endangered Plants of California, are BLM sensitive species, along with others that have been designated by the California State Director," BLM 2009);
- Listed as rare under the California Native Plant Protection Act (Fish and Game Code §1900 et seq.);
- Meet the definition of rare or endangered under CEQA §15380(b) and (d). Species that may meet the definition of rare or endangered include the following:

  - Species considered by the California Native Plant Society (CNPS) to be "rare, threatened or endangered in California" (Lists 1A, 1B and 2);
  - Species that may warrant consideration on the basis of local significance or recent biological information;
  - Some species included on the California Natural Diversity Database's (CNDDB) Special Plants, Bryophytes, and Lichens List (CDFG).
- Considered a locally significant species, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA §15125 (c)) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines). Examples include a species at the outer limits of its known range or a species occurring on an uncommon soil type.

In addition to specific plant taxa, special-status botanical resources include natural vegetation communities that are either unique, of relatively limited distribution in the region, or of particularly high wildlife value. As such, the CDFG maintains a list of natural communities recognized to be of high priority for inventory in CNDDB. Lead agencies may request that impacts to these communities be addressed in environmental documents. Local agencies may also have policies requiring avoidance of rare community types (CDFG 2010c).

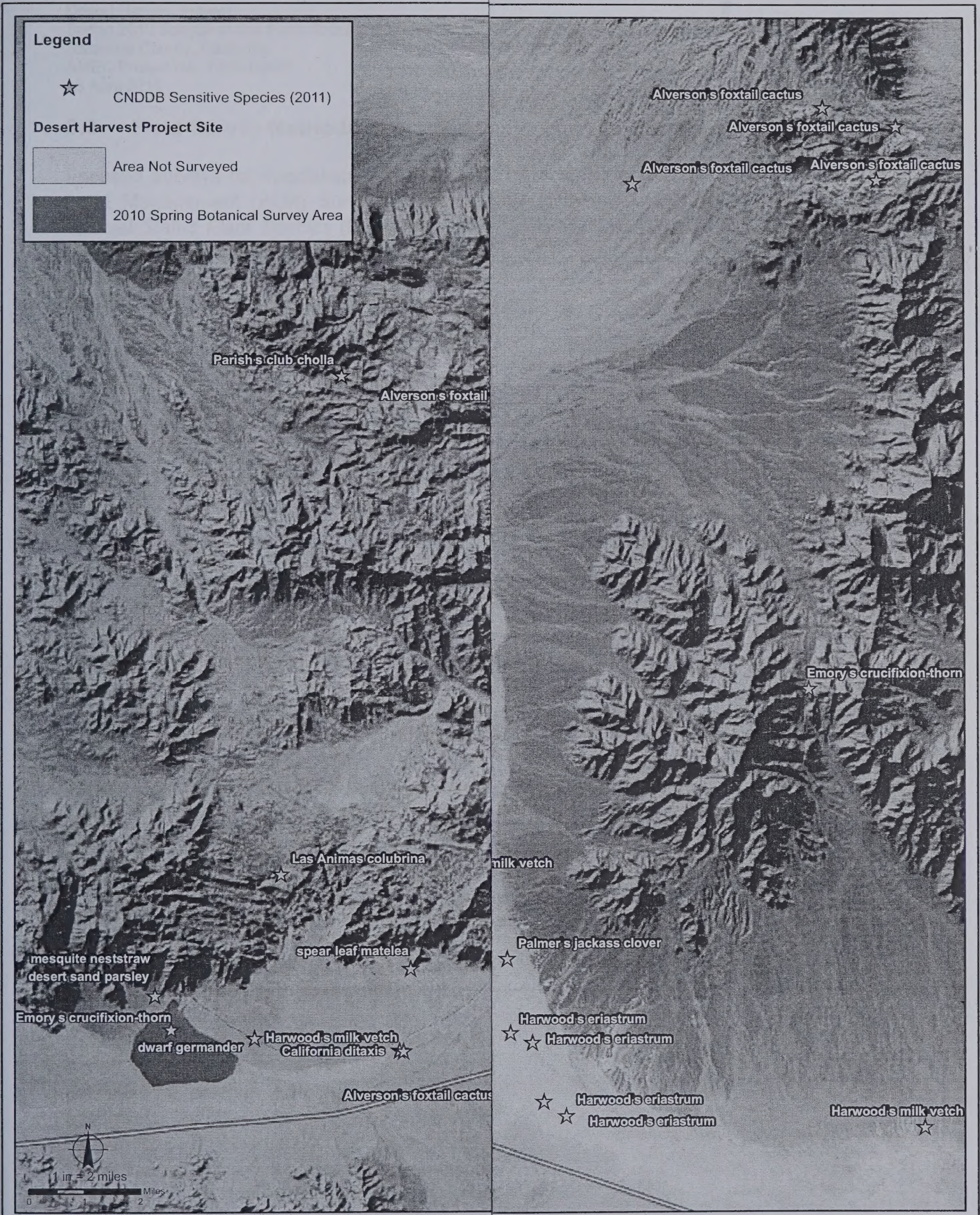
Appendix A presents the list of 19 special-status species considered, based on the literature review, to have potential to occur within the project area, as well as their habitat requirements, distribution, blooming period, listing status and occurrence probability. Figure 3 illustrates documented occurrences of special-status plant species that are known from the vicinity.

3.2 Reference Site Visits

Where available, reference populations located within the general vicinity of the project area were visited for observation prior to field surveys. Two reference populations of special-status species that have potential to occur within the project area were identified and visited by AMEC biologist Nathan Moorhatch and AMEC botanist Shari Norton: Coachella Valley milk-vetch and Harwood's milk-vetch (*Astragalus insularis* var. *harwoodii*).

A reference population of Coachella Valley milk-vetch located at the southeast corner of the intersection of 18th Avenue and Palm Drive in the City of Desert Hot Springs was visited on 12 April 2010. Coachella Valley milk-vetch was observed in fruit at the time of the visit. A reference population of Harwood's milk-vetch located north of Interstate 10 and west of Mesa Road in the City of Blythe was also visited on 12 April 2010. Harwood's milk-vetch was observed blooming and in fruit at the time of this visit.

Coachella Valley milk-vetch is the only listed threatened or endangered plant reported from the vicinity and Harwood's milk-vetch is a relatively widespread CNPS List 2.2 species with potential to occur in the project area. No BLM Sensitive Species or CNPS List 1B species are known from the project vicinity. Reference populations for other special-status plants known from the vicinity were not visited.



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Date: 4/13/2011

FIGURE

3

  - Species considered by the California Native Plant Society (CNPS) to be "rare, threatened or endangered in California" (Lists 1A, 1B and 2);
  - Species that may warrant consideration on the basis of local significance or recent biological information;
  - Some species included on the California Natural Diversity Database's (CNDDB) Special Plants, Bryophytes, and Lichens List (CDFG).
- Considered a locally significant species, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA §15125 (c)) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines). Examples include a species at the outer limits of its known range or a species occurring on an uncommon soil type.

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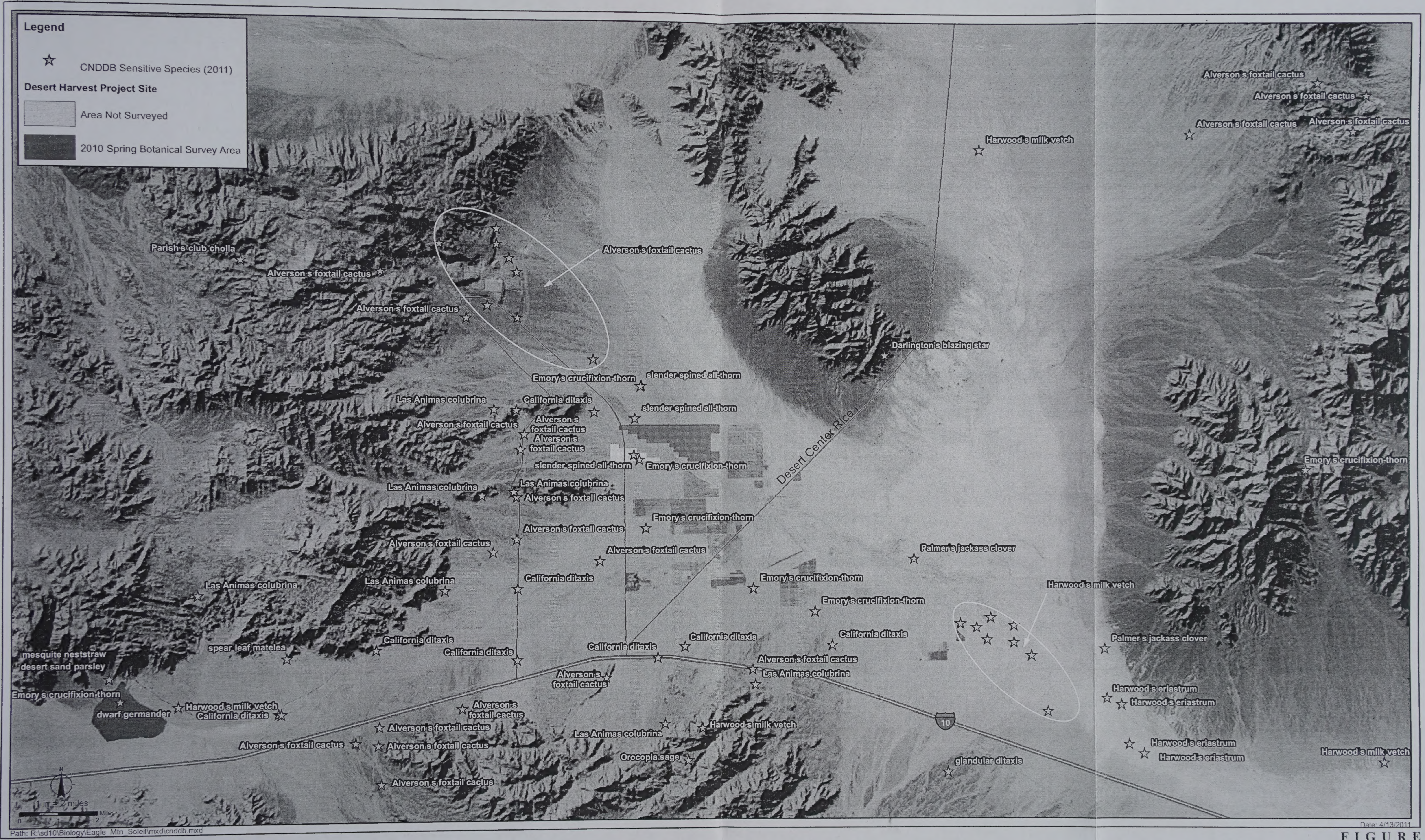

Legend
☆ CNDDB Sensitive Species (2011)
Desert Harvest Project Site
Area Not Surveyed
2010 Spring Botanical Survey Area
Alverson s foxtail cactus
Alverson s foxtail cactus
Alverson s foxtail cactus
Alverson s foxtail cactus
Harwood s milk vetch
Parish s club cholla
Alverson s foxtail cactus
Alverson's foxtail cactus
Alverson s foxtail cactus
Darlington's blazing star
Emory's crucifixion-thorn
slender spined all-thorn
Las Animas colubrina
California ditaxis
slender spined all-thorn
Alverson s foxtail cactus
Alverson s foxtail cactus
Alverson s foxtail cactus
Desert Center Rice
slender spined all-thorn
Emory's crucifixion-thorn
Emory's crucifixion-thorn
Las Animas colubrina
Las Animas colubrina
Alverson s foxtail cactus
Emory s crucifixion-thorn
Alverson s foxtail cactus
Alverson s foxtail cactus
Alverson s foxtail cactus
Palmer s jackass clover
Las Animas colubrina
Las Animas colubrina
California ditaxis
Emory's crucifixion-thorn
Harwood s milk vetch
Emory's crucifixion-thorn
California ditaxis
California ditaxis
California ditaxis
California ditaxis
spear leaf matelea
California ditaxis
Palmer s jackass clover
mesquite neststraw
desert sand parsley
Alverson s foxtail cactus
Las Animas colubrina
Alverson s foxtail cactus
Harwood s eriastrum
Harwood s eriastrum
Emory s crucifixion-thorn
Harwood s milk vetch
California ditaxis
dwarf germander
Alverson s foxtail cactus
Alverson s foxtail cactus
Harwood s milk vetch
10
Las Animas colubrina
Alverson s foxtail cactus
Alverson s foxtail cactus
Harwood s eriastrum
Harwood s eriastrum
Harwood s milk vetch
Orocopia sage
glandular ditaxis
Alverson s foxtail cactus
N
1 in = 2 miles
0 1 2 Miles
Path: R:\sd10\Biology\Eagle Mtn Soleil\mxd\cnddb.mxd
Date: 4/13/2011

FIGURE
3

Special-Status Plant Species Known to Occur within the Project Vicinity
Desert Harvest Project

3.3 Field Survey Methods

Focused surveys for special-status plants were conducted in accordance with the Bureau of Land Management (BLM) *Survey Protocols Required for NEPA/ESA Compliance for BLM Special Status Plant Species* (BLM 2009), as well as the CDFG *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFG 2009). Per these protocols, field surveys are to be conducted in a manner which maximizes the likelihood of locating special-status plant species or special-status natural communities that may be present. Surveys are to be floristic in nature (every plant taxon that is observed on site is identified to the taxonomic level necessary to determine rarity and listing status), conducted at the time of year when species are both evident and identifiable, and conducted using systematic field techniques in all habitats of the site to ensure thorough coverage of potential impact areas. Furthermore, when special-status plants are known to occur in the type(s) of habitat present in the project area, reference sites are to be visited to determine whether those species are identifiable at the time of the survey and to obtain a visual image of the target species, associated habitat, and associated natural community.

Focused surveys for special-status plants were conducted concurrently with desert tortoise (*Gopherus agassizii*) surveys (which included foot surveys of 100 percent of the project site). The desert tortoise surveys were conducted using belt transects spaced 10 meters (m) apart which were systematically walked over the entire 1,057-acre project site. The field crew conducting the desert tortoise survey was given a field guide prepared for this project that illustrated special-status plant species that were identified during the literature and database review (Appendix A). AMEC botanist Shari Norton accompanied all crews performing the desert tortoise surveys and documented all species within the project area.

Tortoise/special-status plant surveys were conducted between 12-17 April by biologists Jim Boone, PhD., Stephen Ferrand, William Ferrand, Alex Heindl, Nathan Moorhatch, Shari Norton, Michael Omana, Dennis Strong, and Michael Wilcox. These surveys were followed by a second survey that was conducted on 7 May 2010 by Nathan Moorhatch and Shari Norton to cover small portion of the project site for which the botanist was unavailable during the initial survey on April 17. During this May 7 survey, the AMEC biologists and botanist walked 10-meter wide belt transects and covered the entirety of the area previously not covered by the botanist. These surveys collectively provided thorough coverage throughout the site, using systematic field techniques in all habitats types present.

Special-status species data were collected using a global positioning system (GPS) device and added to the project's geographic information system (GIS) database. All GIS data were collected as polygon, line, or point data containing a list of attributes for each dedicated occurrence. All plant species encountered during the field surveys were identified and recorded (Appendix B). Species that could not be identified immediately were photographed or collected for further investigation using The *Jepson Manual* (Hickman 1993). Scientific and common names of plants follow Hickman (1993) or more recent published taxonomical revisions of genera.

Surveys included describing vegetation communities within the project area. Vegetation communities were described based on field biologists' qualitative judgements of biotic and abiotic features, including but not limited to species composition, species dominance, soils, substrates, hydrology, and topography. Vegetation communities were classified based on A Manual of California Vegetation (Sawyer et. al. 2009). Vegetation descriptions are provided in Section 2.3 of this report.

4.0 SURVEY RESULTS

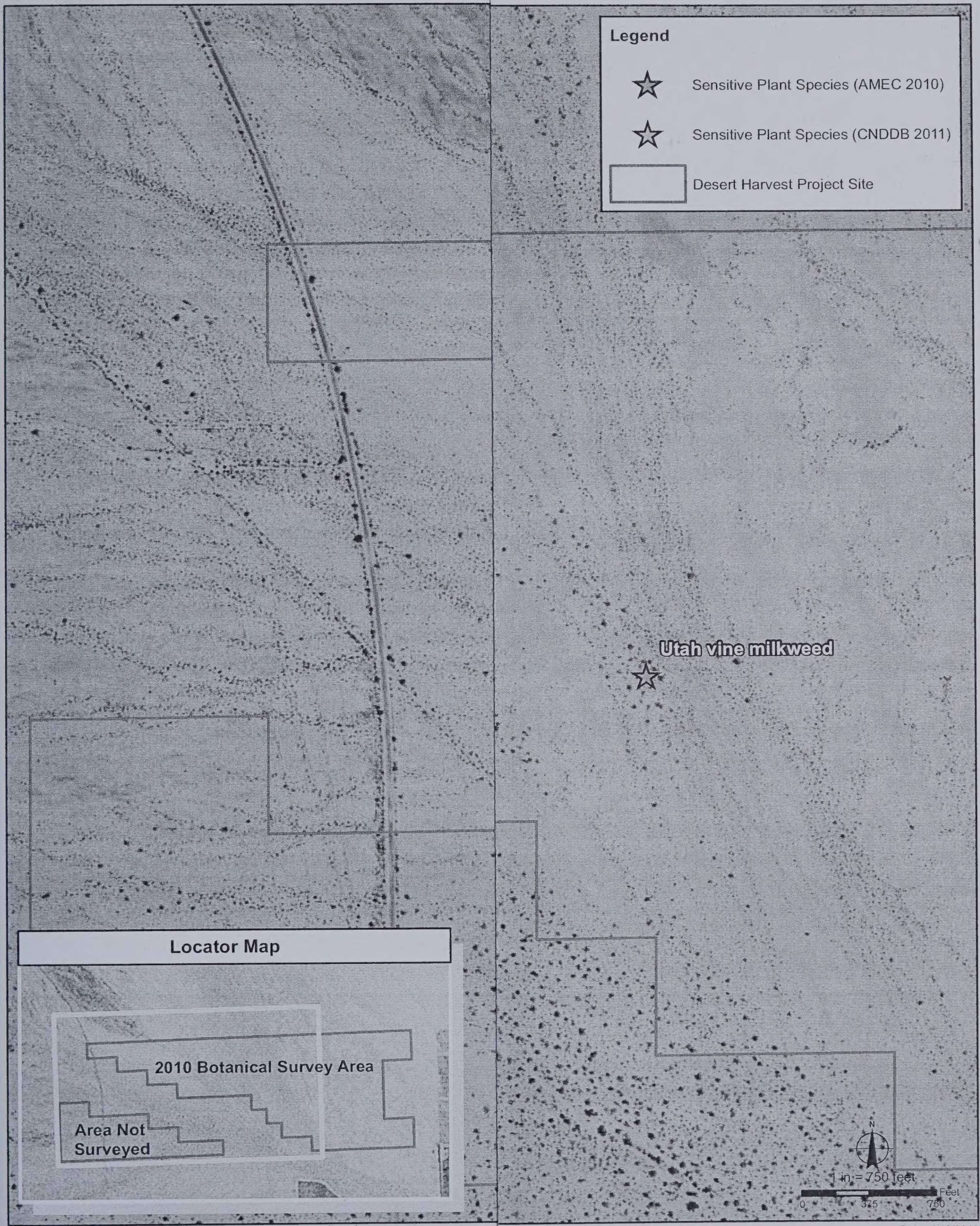
Two special-status plant species were observed during the focused survey: Emory's crucifixion thorn (*Castela emoryi*), and Utah vine milkweed (*Funastrum* [=*Cynanchum*] *utahense*) (Figure 4). While it is likely that the majority of individuals of these two special-status plant species were observed during the survey, it is possible that some individual plants were not observed due to growth under a scrub canopy, or other factors.

Emory's crucifixion is a CNPS List 2.3 species (rare, threatened, or endangered in California, but more common elsewhere) that is in the quassia family (Simaroubaceae). It is known to occur within Mojavean desert scrub, playas, and Sonoran desert scrub habitats within gravelly substrates at elevations ranging from 90-670 meters (m). Emory's crucifixion thorn is a deciduous shrub that blooms from June through July (CNPS 2010). Three individuals of this species were observed within the western portion of the project area (Figure 4) within the Bush-White Burr Sage Scrub vegetation community. Onsite photographs of this species are presented in Appendix C).

Utah vine milkweed is a CNPS List 4.2 species (limited distribution; watch list) that is in the milkweed family (Asclepiadaceae). It is known to occur within sandy or gravelly substrates of Mojavean desert scrub and Sonoran desert scrub habitats at elevations ranging from 150-1435m. Utah vine milkweed is a perennial herb and blooms from April through June (CNPS 2010). Two individuals of this species were observed within the southwestern portion of the project area (Figure 4) within the Bush-White Burr Sage Scrub vegetation community. Onsite photographs of this species are presented in Appendix C).

For each special-status plant species that may have the potential to occur within the project, the probability of occurrence was derived from field experience, expert consultation, reference populations, and/or from literature as compared to the habitat conditions encountered within the project area (Appendix A). Each species was assessed for its potential to occur within the project area based on the following criteria:

- **Observed:** Species observed on the site during surveys described here, or recorded onsite by other qualified biologists.
- **High:** Observed in similar habitat in region by qualified biologists, or habitat on the site is a type often utilized by the species and the site is within the known range of the species.
- **Moderate:** Reported sightings in surrounding region, or site is within the known range of the species and habitat on the site is a type occasionally used by the species.
- **Low:** Site is within the known range of the species but habitat on the site is rarely used by the species.
- **Unlikely to occur:** A focused study failed to detect the species, or, no suitable habitat is present.
- **Unknown:** No focused surveys have been performed in the region, and the species' distribution and habitat are poorly known.


Legend
Sensitive Plant Species (AMEC 2010)
Sensitive Plant Species (CNDDB 2011)
Desert Harvest Project Site
Utah vine milkweed
Locator Map
2010 Botanical Survey Area
Area Not Surveyed
N
1 in = 750 feet
Feet
0
375
750

Path: R:\sd10\Biology\Eagle_Mtn_Soleil\mxd\plant_survey_result.mxd

Date: 4/13/2011

FIGURE

4

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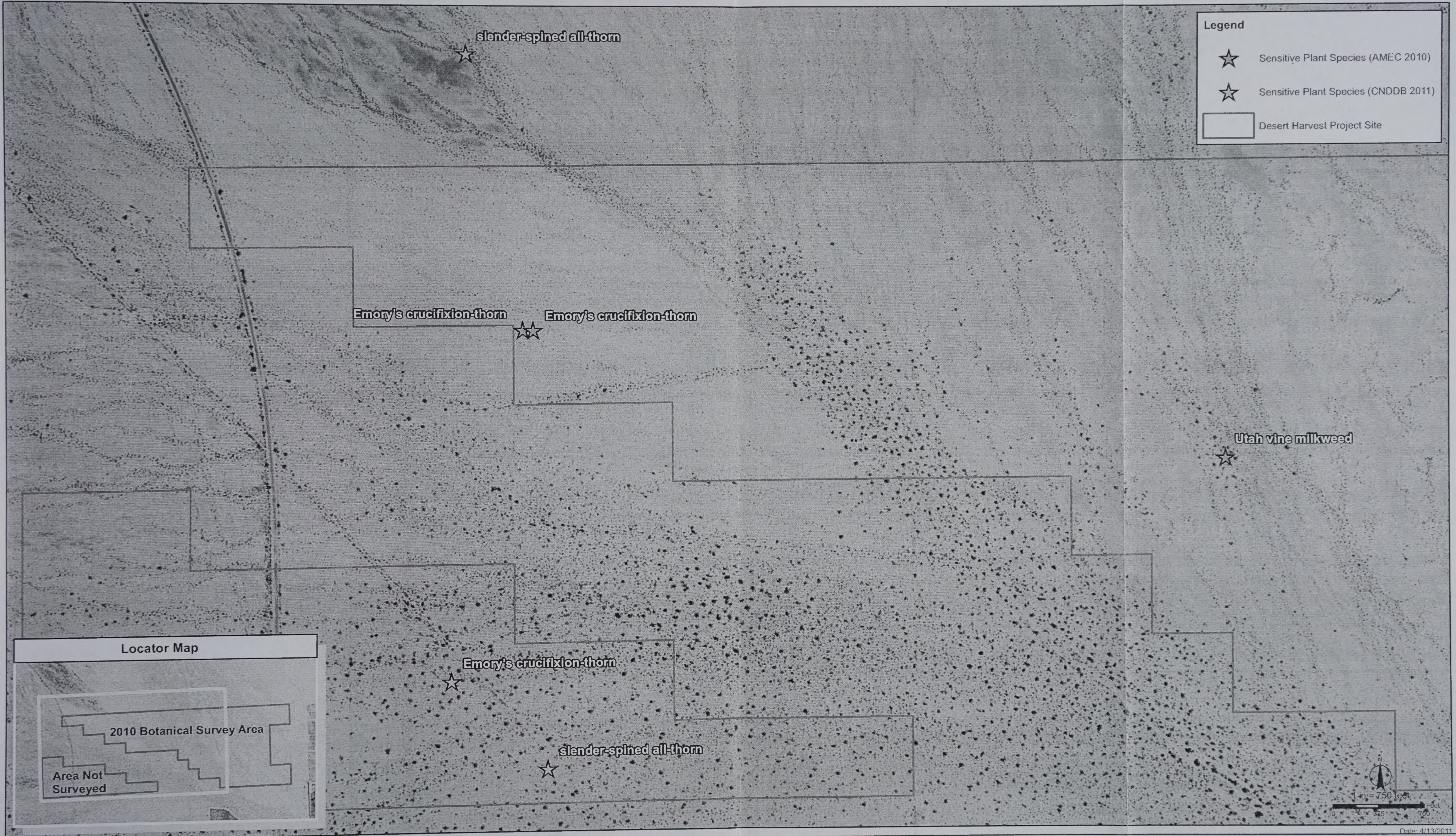
slender-spined all-thorn
Legend
☆ Sensitive Plant Species (AMEC 2010)
☆ Sensitive Plant Species (CNDDB 2011)
▭ Desert Harvest Project Site
Emory's crucifixion-thorn
Emory's crucifixion-thorn
Utah vine milkweed
Locator Map
2010 Botanical Survey Area
Area Not Surveyed
Emory's crucifixion-thorn
slender-spined all-thorn
N
1 in = 750 feet
0
375
750
Feet

Date: 4/13/2011

Path: R:\sd10\Biology\Eagle_Mtn_Soleil\mxd\plant_survey_result.mxd

FIGURE

4

Spring 2010 Focused Special-Status Plant Species Survey Results
Desert Harvest Project

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5.0 CONCLUSION AND RECOMMENDATIONS

No state or federally listed threatened or endangered species or BLM-designated sensitive species were located on the project site. Two special status species, Emory's crucifixion thorn (CNPS List 2.3) and Utah vine milkweed (CNPS List 4.2) were found on the site (Figure 4), One federally listed endangered plant, Coachella Valley milk vetch, has been reported from the project vicinity; however, it is now thought that plants are not the listed variety and are instead the more common freckled milk vetch (*Astragalus insularis* var. *variabilis*). Regardless, if the occurrences of Coachella Valley milk vetch are accurate or not, the special-status surveys conducted for the project were conducted during the appropriate blooming period for this species, thus, it would have likely been observed during the field surveys. No BLM-designated sensitive species have been reported from the vicinity.

Given the above-average rainfall during the winter of 2009-2010, it is likely that the majority of spring-flowering species would have been observable during the surveys. Individuals of Emory's crucifixion thorn and Utah vine milkweed appeared healthy, with no evidence of drought stress, chlorosis, necrosis, or herbivory. It is important to note that one special-status plant species, glandular ditaxis (*Ditaxis claryana*), may have been undetectable due to their growing and/or blooming season occurring at a time other than the survey period. It is recommend that late-season surveys be done in late summer to early fall 2010 in the washes following summer, monsoonal rains, to ensure that all special-status plant species that are likely to occur onsite (Appendix A) are assessed.

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APPENDIX A

SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR WITHIN THE DESERT HARVEST PROJECT

Sensitive species	Habitat and Distribution	Blooming Period	Status	Occurrence Probability
Abronia villosa var. *aurita* **chaparral sand-verbena**	Annual herb. Occurs in desert scrub in sandy soils east of the Little San Bernardino Mountains.	January – August	Federal: ND BLM:ND State: ND CNDDB: S2.1 CNPS: List 1B.1	Moderate potential to occur. The plants in western Riverside County appear to be a distinct taxon from those found east of the mountains, and it is this taxon in western Riverside County which is of conservation concern not the desert taxon.
Ammoselinum giganteum **desert sand-parsley**	Occurs in Sonoran desert scrub in heavy soils under shrubs within the Coachella Valley.	March - April	Federal: ND BLM:ND State: ND CNDDB: SH CNPS: List 2.3	Unlikely to occur. Suitable habitat onsite; however, this species was not observed during blooming period focused surveys.
Astragalus insularis var. *harwoodii* **Harwood's milk-vetch**	Annual herb. Occurs in desert dunes and Mojavean desert scrub, on sandy or gravelly soils.	January – May	Federal: ND BLM:ND State: ND CNDDB:S2.2 CNPS: List 2.2	Unlikely to occur. Suitable habitat onsite; however, this species was not observed during blooming period focused surveys
Astragalus lentiginosus var. *coachellae* **Coachella Valley milk-vetch**	Annual/perennial herb. Occurs in Sonoran desert scrub in sandy flats, washes, outwash fans, sometimes on dunes.	February - May	Federal: END CA: ND CNDDB:S2.1 CNPS: List 1B.2	Unlikely to occur. Suitable habitat onsite; however, this species was not observed during blooming period focused surveys.
Ayenia compacta **ayenia**	Perennial herb. Occurs in Sonoran desert scrub on rocky soils.	March – April	Federal: ND BLM:ND State: ND CNDDB:S3.3 CNPS: List 2.3	Unlikely to occur. Suitable habitat onsite; however, this species was not observed during blooming period focused surveys.
Castela emoryi **crucifixion thorn**	Perennial deciduous shrub. Occurs in Mojavean desert scrub and Sonoran desert scrub, in playas, in gravelly soils, and sometimes in alkali playas or washes.	April - July	Federal: ND BLM:ND State: ND CNDDB:S2.2 CNPS: List 2.3	**Present.** Species observed during focused surveys. See text and Figure 4.
Colubrina californica **Las Animas colubrina**	Perennial deciduous shrub. Occurs in Mojave desert scrub and Sonoran desert scrub in rocky canyon areas.	April – June	Federal: ND BLM:ND State: ND CNDDB: S2S3.3 CNPS: List 2.3	Unlikely to occur. No suitable rocky canyon micro-habitat onsite; this species was not observed during blooming period focused surveys.
Coryphantha alversonii **Alverson's foxtail cactus**	Perennial stem succulent. Occurs in Mojavean desert scrub and Sonoran desert scrub in granitic sandy or rocky soils.	April – June	Federal: ND BLM:ND State: ND CNDDB:S3.2 CNPS: List 4.3	Unlikely to occur. Suitable habitat onsite; however, this species was not observed during blooming period focused surveys.
Funastrum (=Cynanchum) utahense **Utah vine milkweed**	Perennial herb. Occurs in Mojavean desert scrub and Sonoran desert scrub in sandy or gravelly soils	April - June	Federal: ND BLM:ND State: ND CNDDB:S3.2 CNPS: List 4.2	**Present**. Species observed during focused surveys.See text and Map 4.

Sensitive species	Habitat and Distribution	Blooming Period	Status	Occurrence Probability
Ditaxis claryana **glandular ditaxis**	Perennial herb. Occurs in Mojavean desert scrub and Sonoran desert scrub, in dry washes and on rocky hillsides, in sandy soils.	October – March	Federal: ND BLM:ND State: ND CNDDB:S1 CNPS: List 2.2	Unlikely to occur. Suitable habitat onsite; however, this perennial species was not observed during focused surveys. Follow-up surveys recommended due to extended blooming season.
Ditaxis serrata var. californica **California ditaxis**	Perennial herb. Occurs in Sonoran desert scrub, on sandy washes and alluvial fans of the foothill and lower desert slopes.	March – December	Federal: ND BLM:ND State: ND CNDDB:S2 CNPS: List 3.2	Unlikely to occur. Suitable habitat onsite; however, this species was not observed during blooming period focused surveys. Follow-up surveys recommended due to extended blooming season.
Grusonia parishii **Parish's club-cholla**	Perennial stem succulent. Occurs in Joshua tree woodland, Mojavean desert scrub, and Sonoran desert scrub on sandy and rocky soils.	May - June	Federal: ND BLM:ND State: ND CNDDB:S2 CNPS: List 3.2	Unlikely to occur. Suitable habitat onsite; however, this species was not observed during blooming period focused surveys.
Matelea parvifolia **spearleaf**	Perennial herb. Occurs in Mojavean desert scrub and Sonoran desert scrub on rocky soils.	March – May	Federal: ND BLM:ND State: ND CNDDB:S2.2 CNPS: List 2.3	Unlikely to occur. Suitable habitat onsite; however, this species was not observed during blooming period focused surveys.
Salvia greatae **Orocopia sage**	Perennial evergreen shrub. Occurs in Mojavean desert scrub and Sonoran desert scrub, in broad alluvial bajadas and fans adjacent to desert washes in gravelly or rocky soils, and slopes of canyons.	March - April	Federal: ND BLM:ND State: ND CNDDB:S2 CNPS: List 1B.3	Unlikely to occur. Suitable habitat onsite; however, this species was not observed during blooming period focused surveys. Project site outside known range for species, which is on the south side of the Orocopia Mountains (pers. comm. Andy Sanders).
Selaginella eremophila **desert spike-moss**	Rhizomatous perennial herb. Occurs in Sonoran desert scrub, in shaded areas on gravelly soils, in crevices, or among rocks	(May) June (July) Months in parentheses are uncommon	Federal: ND BLM:ND State: ND CNDDB:S2.2 CNPS: List 2.2	Unlikely to occur. Suitable habitat onsite; however, this species was not observed during focused surveys.
Senna covesii **Coves's cassia**	Perennial herb. Occurs in Sonoran desert scrub on sandy soils.	March – June	Federal: ND State: ND CNDDB:S2.2 CNPS: List 2.2	Unlikely to occur. Suitable habitat onsite; however, this species was not observed during blooming period focused surveys.
Stylocline sonorensis **mesquite neststraw**	Annual herb. Occurs in Sonoran desert scrub on sandy soils.	April	Federal: ND BLM:ND State: ND CNDDB:SX CNPS: List 1A	Unlikely to occur. Suitable habitat onsite; however, this species was not observed during blooming period focused surveys.

Sensitive species	Habitat and Distribution	Blooming Period	Status	Occurrence Probability
Teucrium cubense ssp. depressum **dwarf germander**	Annual herb. Occurs in desert dunes, Sonoran desert scrub, and playa margins, in areas where water accumulates following heavy rains.	March – May (uncommonly from September – November)	Federal: ND BLM:ND State: ND CNDDB:S2 CNPS: List 2.2	Unlikely to occur. Suitable habitat onsite; however, this species was not observed during blooming period focused surveys.
Wislizenia refracta ssp. refracta **jackass clover**	Annual herb. Occurs in desert dunes within Mojavean desert scrub, Sonoran desert scrub, and playas.	April - November	Federal: ND BLM:ND State: ND CNDDB:S1.2 CNPS: List 2.2	Unlikely to occur. Suitable habitat onsite; however, this species was not observed during blooming period focused surveys.

Definitions of Status Designations and Occurrence Probabilities for Tables 1, 2, and 3.

Federal designations
END: Endangered
ND: Not designated

State designations :
ND: Not designated

CNDDB Rank:
S1 = Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.
S2 = Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.
S3 = Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it very vulnerable to extirpation.
SH = All sites are historical
SX = All California sites are extirpated.

California Native Plant Society (CNPS) designations: (Note: According to CNPS [Tibor 2001], plants on Lists 1B and 2 meet definitions for listing as threatened or endangered under Section 1901, Chapter 10 of the California Fish and Game Code.)

List 1B:	Plants rare and endangered in California and throughout their range.
List 2:	Plants rare, threatened or endangered in California but more common elsewhere.
List 3:	Plants for which more information is needed.
List 4:	Plants of limited distribution; a "watch list."

CNPS List Extension
0.1: Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat
0.2: Fairly endangered in California (20-80% of occurrences threatened)
0.3: Not very threatened in California (<20% of occurrences threatened)

Definitions of occurrence probability:

Present:	Observed on the site by AMEC personnel, or recorded on-site by other qualified biologists.
High:	Observed in similar habitat in region by qualified biologists, or habitat on the site is a type often utilized by the species and the site is within the known range of the species.
Moderate:	Reported sightings in surrounding region, or site is within the known range of the species and habitat on the site is a type occasionally used by the species.
Low:	Site is within the known range of the species but habitat on the site is rarely used by the species.
Unlikely to occur:	A focused study failed to detect the species, or, no suitable habitat is present.
Unknown:	No focused surveys have been performed in the region, and the species' distribution and habitat are poorly known.

APPENDIX B

OBSERVED VASCULAR PLANT SPECIES

Scientific Name	Common Name
ANGIOSPERMS (DICOTYLEDONS)	
AMARANTHACEAE(CHENOPODIACEAE)	**AMARANTH FAMILY**
Chenopodium sp.	goosefoot
Tidestromia oblongifolia	Arizona honeysweet
APOCYNACEAE (ASCLEPIADACEAE)	**DOGBANE FAMILY**
Asclepias erosa	desert milkweed
Asclepias subulata	rush milkweed
Funastrum (= Cynanchum) utahense	Utah vine milkweed
ASTERACEAE	**SUNFLOWER FAMILY**
Ambrosia dumosa	burro bush
Ambrosia salsola	cheesebush
Bebbia juncea	sweetbush
Chaenactis carphoclinia	pebble pincushion
Chaenactis fremontii	pincushion flower
Chaenactis stevioides	desert pincushion
Encelia farinosa	brittlebush
Encelia frutescens	button brittlebush
Geraea canescens	desert sunflower
Malacothrix glabrata	desert dandelion
Monoptilon bellioides	Mojave desert star
Perityle emoryi	Emory's rock daisy
Psathyrotes ramosissima	turtleback
Rafinesquia neomexicana	desert chicory
BORAGINACEAE	**BORAGE FAMILY**
Cryptantha barbigera	bearded cryptantha
Cryptantha dumetorum	twining cryptantha
Cryptantha pterocarya	winged-nut forget-me-not
Pectocarya platycarpa	broadfruit combseed
Pectocarya recurvata	curvenut combseed
BRASSICACEAE	**MUSTARD FAMILY**
**Brassica tournefortii*	wild turnip
Lepidium lasiocarpum	shaggyfruit pepperweed
CACTACEAE	**CACTUS FAMILY**
Cylindropuntia echinocarpa	golden cholla
Cylindropuntia ramosissima	pencil cholla
Ferocactus cylindraceus	barrel cactus
Opuntia basilaris	beavertail cactus
CARYOPHYLLACEAE	**PINK FAMILY**
Achyronychia cooperi	frost mat
CUCURBITACEAE	**GOURD FAMILY**
Brandegea bigelovii	desert starvine
EHRETIACEAE (BORAGINACEAE)	**EHRETIA FAMILY**
Tiquilia plicata	plicate tiquilia
EUPHORBIACEAE	**SPURGE FAMILY**
Chamaesyce albomarginata	rattlesnake weed
Chamaesyce polycarpa	golondrina
Croton californicus	California croton

Scientific Name	Common Name
Ditaxis lanceolata	lanceleaf ditaxis
Ditaxis neomexicana	common ditaxis
Stillingia linearifolia	linear-leaved stillingia
FABACEAE	**LEGUME FAMILY**
Acacia greggii	cat claw acacia
Dalea mollissima	hairy dalea
Lupinus arizonicus	Arizona lupine
Lupinus sp.	lupine
Marina parryi	Parry dalea
Olneya tesota	ironwood
Parkinsonia florida	blue palo verde
Psorothamnus emoryi	dye plant
Psorothamnus schottii	indigobush
Psorothamnus spinosus	smoke tree
FOUQUIERIACEAE	**OCOTILLO FAMILY**
Fouquieria splendens	ocotillo
HYDROPHYLLACEAE	**WATERLEAF FAMILY**
Phacelia crenulata var. *ambigua*	purple-stem phacelia
MALVACEAE	**MALLOW FAMILY**
Eremalche rotundifolia	desert four-spot
NYCTAGINACEAE	**FOUR O'CLOCK FAMILY**
Abronia villosa var. *villosa*	sand verbena
ONAGRACEAE	**EVENING PRIMROSE FAMILY**
Camissonia boothii	Booth's evening-primrose
Camissonia claviformis	brown-eyed evening primrose
Cammissonia sp.	evening primose
PAPAVERACEAE	**POPPY FAMILY**
Eschscholzia minutiflora	pygmy goldenpoppy
PLANTAGINACEAE	**PLANTAIN FAMILY**
Plantago ovata	woolly plantain
POLEMONIACEAE	**PHLOX FAMILY**
Gilia latifolia	broadleaf gilia
Loeseliastrum schottii	Schott's calico
POLYGONACEAE	**BUCKWHEAT FAMILY**
Chorizanthe brevicornu	brittle spineflower
Chorizanthe corrugata	wrinkled spineflower
Chorizanthe rigida	devil's spiny herb
Eriogonum reniforme	kidneyleaf buckwheat
RESEDACEAE	**MIGNONETTE FAMILY**
Oligomeris linifolia	narrow-leaved oligomeris
SIMAROUBACEAE	**QUASSIA FAMILY**
Castela emoryi	crucifixion thorn
ZYGOPHYLLACEAE	**CALTROP FAMILY**
Fagonia laevis	California fagonia
Fagonia pachyacantha	sticky fagonia
Larrea tridentata	creosote bush
*Tribulus terrestris**	puncture vine

Scientific Name	Common Name
ANGIOSPERMS (MONOCOTYLEDONS)	
ARECACEAE	**PALM FAMILY**
**Phoenix dactylifera*	date palm
LILIACEAE	**LILY FAMILY**
Calochortus sp.	mariposa lily
Hespercallis undulata	desert lily
POACEAE	**GRASS FAMILY**
Pleuraphis (=*Hilaria*) *rigida*	big galleta
*Schismus barbatus**	Mediterranean schismus

Notes:

This list reports plants observed during site surveys. Other species may have been undetectable due to their growing season. Plants were identified from keys, descriptions and drawings in Hickman (ed.) 1993 and Munz 1974. Some specimens were identified or confirmed by Andrew Sanders (U.C. Riverside Herbarium). Unless noted otherwise, nomenclature and systematics follows Hickman (ed.) 1993. Where other names are also in use, they are noted in parentheses.

Symbols and Abbreviations:

*	=	Non-native species
Sp	=	Plant identified only to genus
ssp.	=	Subspecies

APPENDIX C

REPRESENTATIVE SITE PHOTOGRAPHS

DESERT HARVEST PROJECT
FOCUSED SPECIAL-STATUS PLANT SPECIES SURVEYS
PHOTOGRAPHIC LOG

Photograph No. 1

Representative photo of Creosote Bush-White Burr Sage Scrub vegetation community.

Photograph No. 2

Representative photo of Smoke Tree Woodland vegetation community.

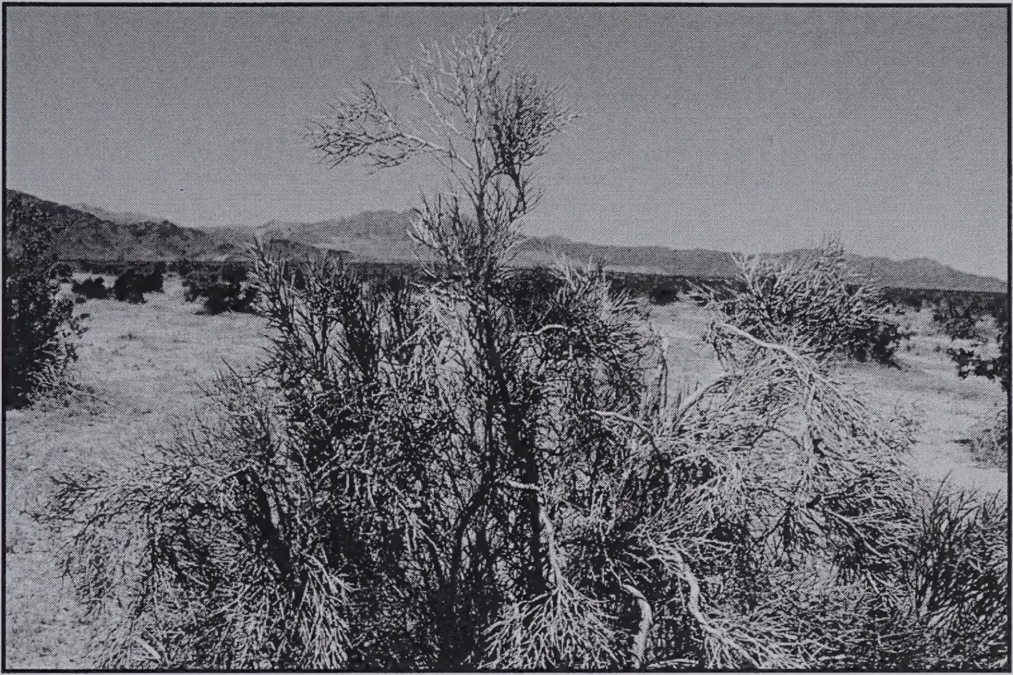
DESERT HARVEST PROJECT
FOCUSED SPECIAL-STATUS PLANT SPECIES SURVEYS
PHOTOGRAPHIC LOG

Photograph No. 3

Representative photo of desert pavement area within the Creosote Bush-White Burr Sage Scrub vegetation community.

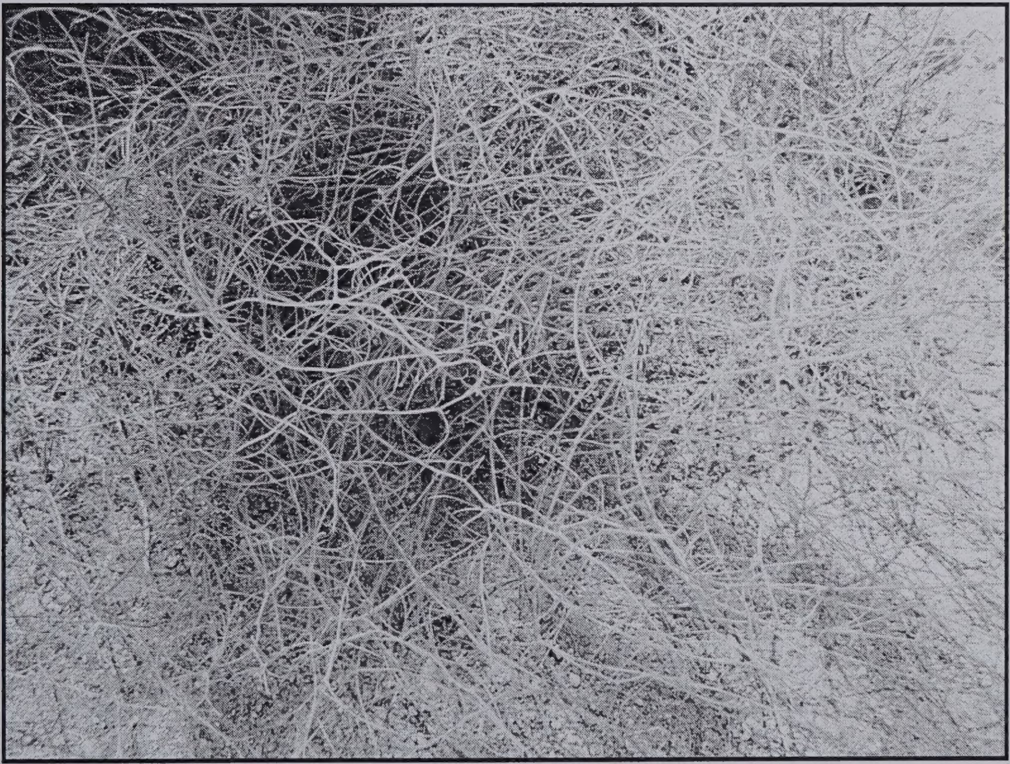
Photograph No. 4

Surveyors walking belt transect Creosote Bush-White Burr Sage Scrub vegetation community.



Photograph No. 5

Photo of crucifixion thorn (*Castela emoryi*).



Photograph No. 6

Photo of Utah cynanchum (*Funastrum* [=*Cynanchum*] *utahense*).

Appendix C.4

Avian Point Counts in 20111

Desert Harvest Solar Project

Avian Point Counts in 2011

Riverside County, California
Township 4 South, Range 15 East, Sections 25, 26 & 27
USGS 7.5' Victory Pass & East of Victory Pass Quadrangles

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AMEC Project No. 11-554-00460

Desert Harvest Solar Project
Avian Point Counts in 2011
Aspen Environmental Group
19 August 2011

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ACRONYMS AND ABBREVIATIONS

AMEC	AMEC Earth & Environmental, Inc.
BLM	Bureau of Land Management
CDFG	California Department of Fish and Game

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1.0 INTRODUCTION

AMEC Earth & Environmental, Inc. (AMEC) was contracted by Aspen Environmental Group (Aspen) to conduct avian point count surveys during winter and spring of 2011 for the proposed Desert Harvest photovoltaic solar energy project located in unincorporated Riverside County California. The proposed project consists of the development of a 100-150 mega-watt photovoltaic panel solar power plant. These surveys were conducted to comply with requirements of the Bureau of Land Management (BLM) for renewable energy projects.

2.0 PROJECT LOCATION AND DESCRIPTION

The Desert Harvest project site is located on public lands administered by the BLM in unincorporated Riverside County, approximately 6 miles north of Desert Center, California (Township 4 South, Range 15 East, Sections 25, 26, 27, USGS 7.5' *Victory Pass* & *East of Victory Pass* quadrangles)(see Figure 1). The applicant, enXco Development Corporation (enXco) proposes to build a 100-150 mega-watt (MW) solar power generating plant incorporating thin-film photovoltaic panels (enXco 2010). The serialized application number assigned by the BLM for this project is 049491. The Right of Way Application consists of two non-contiguous parcels (see Figure 2). The eastern parcel is 1,055 acres and the western parcel is 270 acres.

Site topography is mostly flat with elevations ranging from 583 to 675 feet above sea level. Soils vary from sandy alluvium to hard packed desert pavement. Onsite ephemeral drainages flow southeasterly towards Desert Center at a slope of less that 1% (enXco 2010).

Surrounding land uses include undeveloped natural open space to the west, north and south. Some of the lands to the southeast of the site were converted to agricultural uses (jojoba [*Simmondsia chinensis*] farming) in the past but now appear to be abandoned.

3.0 METHODS

Field survey methods were derived and adapted from the following sources and approved prior to initiation of point count surveys by the BLM Desert District Office (L. LaPré, *in litt.*):

- BLM Solar Facility Point Count Protocol (2009);
- Managing and Monitoring Birds Using Point Counts, (Ralph et al. 1995)

The BLM point count protocol is as follows:

- One point count transect per square mile
- Eight point count locations per transect
- Point counts must be at least 250 meters apart
- Conduct point counts one day per week for four consecutive weeks between March and April (breeding)

- Conduct point counts one day per week for four consecutive weeks between November and January (wintering)
- Conduct point counts during the four hour period beginning at sunrise on any given date
- Each point count shall be ten minutes long, with all birds recorded within a 100 meter radius
- Concentrate the point count stations in areas where there will be birds (washes, high vegetation areas, etc.)

The project site is 1,325 acres, or 45 acres in excess of two sections. AMEC contacted Dr. Lawrence F. LaPré of the BLM regarding the number of transects necessary for this project site. Dr. LaPré stated that two transects of eight point count stations each was adequate (pers. comm. with S. Myers).

The point count locations were established in the field on 27 December 2010 by Stephen J. Myers and Chet McGaugh. As specified in the BLM protocol, the points were placed in the most suitable areas for birds (e.g., washes and relatively high density vegetation areas). Aerial photographs were examined in order to determine the most likely areas of well developed habitat. These areas were walked, and points were established at locations with good visibility. Many of the point count stations were located within or adjacent to washes that are dominated by ironwood (*Olneya tesota*), with lesser amounts of smoketree (*Psorothamnus spinosus*), blue palo verde (*Parkinsonia florida*), and catclaw (*Acacia greggii*). Several of the points were established at or just outside the edge of wash habitat in order to sample the adjacent areas dominated by creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*). Each point was captured on a hand-held Global Positioning System unit, and marked with wooden stakes (approximately 2 feet tall) driven into the ground. Each stake was further marked with brightly-colored flagging in order to maximize visibility. Each point count station was assigned an identifying number (1 through 16). Photo 1 shows a typical point count location.

Conducting point counts on the two transects (16 stations) during the required 4-hour window required two “person-days” (mornings) to complete each weekly series of counts. Access and logistics resulted in a division of labor whereby the number of points visited by each ornithologist varied from seven to nine per morning. Table 1 includes the surveyors, survey dates, times, and weather variables.

Table 1.
Desert Harvest Solar Project Point Count Survey (2011) Data.

Date	Surveyor	Point Numbers	Time	Temperature (°F)	Cloud Cover (%)	Wind Speed (mph)
Winter Season Survey #1						
4 January	CM	1-5, 9-10	0659-1000	39-50	0	0-5
4 January	SJM	6-8, 11-16	0709-0950	39-50	0	0-5
Winter Season Survey #2						
10 January	CM	9-16	0715-0930	50-63	20	0-1
10 January	SJM	1-8	0700-0957	50-63	20	0-1
Winter Season Survey #3						
17 January	SJM	9-16	0654-0905	58-69	0	0-2
18 January	SJM	1-8	0657-1005	58-72	0	1-4
Winter Season Survey #4						
24 January	CM	1-8	0650-1005	44-65	0	0-1
24 January	SJM	9-16	0654-1001	44-64	0	0-1
Nesting Season Survey #1						
30 March	JFG	6-8, 11-16	0818-1112	65-82	20	0-12
30 March	CM	1-5, 9-10	0813-1032	65-82	20	0-12
Nesting Season Survey #2						
5 April	CM	6-8, 11-16	0738-0952	58-78	20	0-2
5 April	SJM	1-5, 9-10	0659-0930	57-77	10	1-2
Nesting Season Survey #3						
14 April	JFG	1-5, 9-10	0715-1008	55-72	0	3-12
14 April	SJM	6-8, 11-16	0701-0927	55-70	0	8
Nesting Season Survey #4						
28 April	CM	1-5, 9-10	0722-0900	71-84	0	0-1
28 April	SJM	6-8, 11-16	0714-0938	70-84	0	2-6

Key to Surveyors: JFG = John F. Green, CM = Chet McGaugh, SJM = Stephen J. Myers

During each visit, the surveyors recorded all birds detected during the 10-minute count period at each point count station. In addition, the surveyors noted any other bird species that were encountered on the project site while walking or driving to and from the point count stations. A complete list of bird species detected during this study is included as Appendix 2.

4.0 RESULTS

Winter Season Point Counts

Sixty-six individual birds were detected during the winter season point counts, for a mean of 1.03 birds per point count (66 birds divided by [16 points X 4 counts]). Verdin (*Auriparus flaviceps*) was the most frequently encountered and numerous species detected during the winter, with 22 birds (33% of all birds detected, and detected on 30% of all counts). Fourteen species were detected during the winter counts (see Tables 2 through 5).

Nesting Season Point Counts

During the nesting season counts, 135 individual birds were detected (24 species) (see Tables 6 through 9). The mean number of birds per count during the nesting season was 2.11. Verdin was the most numerous and frequently detected species during nesting season (35 birds, or

26% of all birds detected, detected on 44% of counts). Ash-throated Flycatcher (*Myiarchus cinerascens*) [29 birds] and Loggerhead Shrike (*Lanius ludovicianus*) [12 birds] were the next most numerous birds during nesting season.

Several migratory species (which do not nest in the area of the project) were noted during the nesting season point counts, including Vaux's Swift (*Chaetura vauxi*), Gray Flycatcher (*Empidonax wrightii*), Violet-green Swallow (*Tachycineta thalassina*), Tree Swallow (*Tachycineta bicolor*), Cliff Swallow (*Petrochelidon pyrrhonota*), Barn Swallow (*Hirundo rustica*), and Blue-gray Gnatcatcher (*Polioptila caerulea*).

Incidental Observations

Common Ravens (*Corvus corax*) were frequently detected during and between point counts during both winter and nesting season. However, almost all ravens were observed at a distance, with only four individuals recorded within the 100 meter point count radius.

A total of 45 bird species was detected during the study, including the winter season, and nesting season point count data and incidental observations made during both seasons (see Appendix 2).

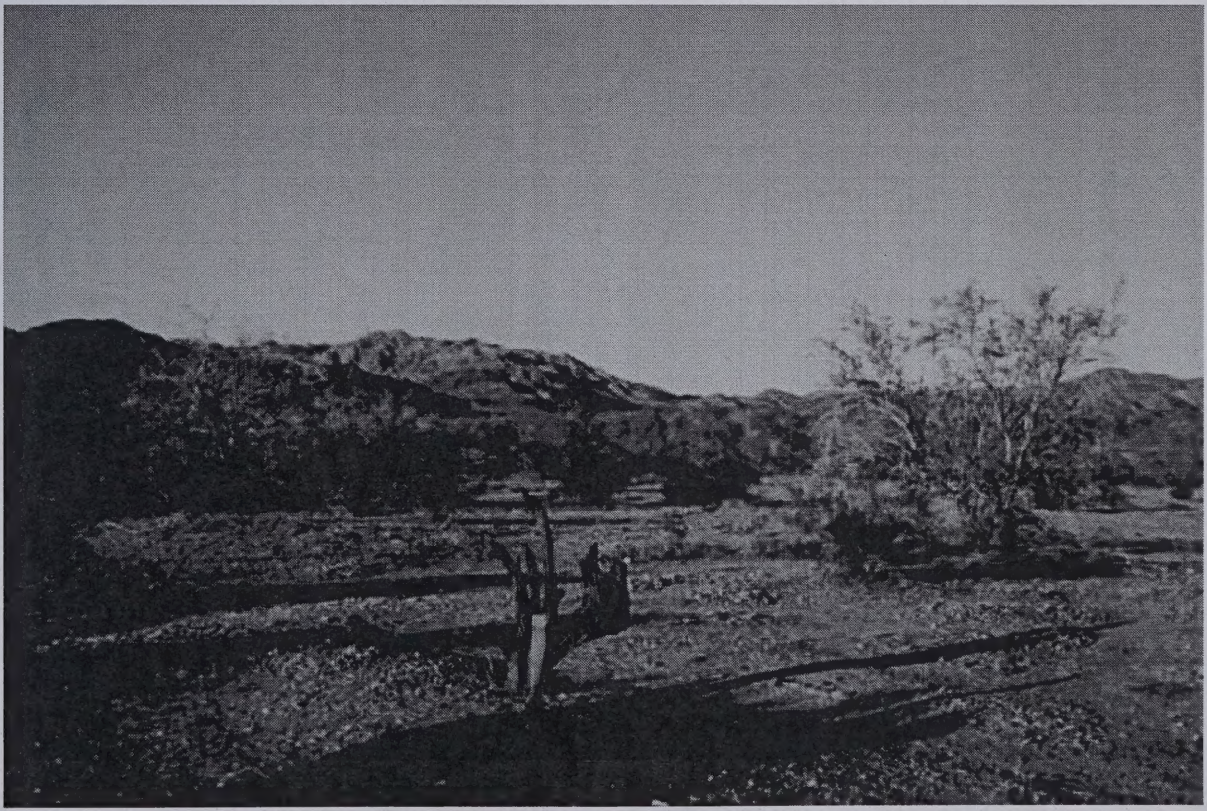

Figure 1. A typical point count station, showing the wooden stake marker (Point #3).

Table 2.
Desert Harvest Solar Project: Avian Point Counts, Winter Season, Survey #1.

	Point Count Stations															
Species	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Ladder-backed Woodpecker	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Say's Phoebe	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-
*Loggerhead Shrike	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Horned Lark	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-
Verdin	-	-	-	-	-	1	1	1	1	-	1	1	-	1	-	-
Blue-gray Gnatcatcher	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
Black-tailed Gnatcatcher	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-
Ruby-crowned Kinglet	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Black-throated Sparrow	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
House Finch	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-

Table 3.
Desert Harvest Solar Project: Avian Point Counts, Winter Season, Survey #2.

	Point Count Stations															
Species	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Say's Phoebe	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
*Loggerhead Shrike	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Verdin	-	-	-	-	1	2	-	-	-	-	-	-	-	-	-	-
Black-tailed Gnatcatcher	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Black-throated Sparrow	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-
House Finch	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 4.
Desert Harvest Solar Project: Avian Point Counts, Winter Season, Survey #3.

	Point Count Stations															
Species	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Ladder-backed Woodpecker	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
*Loggerhead Shrike	-	-	1	1	-	-	-	-	1	-	-	-	-	-	-	-
Common Raven	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-
Verdin	1	-	-	-	-	1	-	1	1	1	1	-	-	-	-	1
Black-tailed Gnatcatcher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Phainopepla	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Yellow-rumped Warbler	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-
Black-throated Sparrow	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Lesser Goldfinch	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-

Table 5. Desert Harvest Solar Project: Avian Point Counts, Winter Season, Survey #4.

	Point Count Stations															
Species	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Red-tailed Hawk	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Say's Phoebe	1	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-
*Loggerhead Shrike	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
Verdin	-	-	-	-	-	-	-	-	2	-	-	-	1	-	-	2
Blue-gray Gnatcatcher	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Black-tailed Gnatcatcher	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-
American Pipit	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Yellow-rumped Warbler	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-

Table 6. Desert Harvest Solar Project: Avian Point Counts, Nesting Season, Survey #1.

	Point Count Stations															
Species	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
American Kestrel	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Mourning Dove	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-
Gray Flycatcher	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Ash-throated Flycatcher	-	-	-	-	1	1	2	-	-	-	3	-	2	-	-	1
*Loggerhead Shrike	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Horned Lark	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2
Violet-green Swallow	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-
Verdin	-	-	-	-	1	-	1	-	1	-	1	1	-	-	-	-
Black-tailed Gnatcatcher	-	-	-	-	-	2	-	-	-	-	-	2	-	1	-	-
Yellow-rumped Warbler	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
White-crowned Sparrow	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
House Finch	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-

Table 7.
Desert Harvest Solar Project: Avian Point Counts, Nesting Season, Survey #2.

	Point Count Stations															
Species	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
White-winged Dove	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mourning Dove	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Ash-throated Flycatcher	-	-	-	-	2	2	-	-	-	-	1	-	2	1	1	-
*Loggerhead Shrike	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
Horned Lark	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Tree Swallow	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Verdin	1	-	-	-	-	-	2	-	-	-	1	-	1	1	-	1
Bewick's Wren	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-

Table 8.
Desert Harvest Solar Project: Avian Point Counts, Nesting Season, Survey #3.

	Point Count Stations															
Species	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Turkey Vulture	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Unidentified hummingbird	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ladder-backed Woodpecker	-	-		1	-	-	-	-	-	-	-	-	-	-	-	-
Ash-throated Flycatcher	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-
*Loggerhead Shrike	-	-	-	-	1	-	-	-	-	2	-	-	-	-	-	-
Common Raven	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cliff Swallow	-	-	3		-	-	-	-	-	-	-	-	-	-	-	-
Verdin	-	-	-	-	1	-	1	-	1	-	1		2	1		1
Black-tailed Gnatcatcher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Northern Mockingbird	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Yellow-rumped Warbler	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-
Scott's Oriole	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-

Table 9.
Desert Harvest Solar Project: Avian Point Counts, Nesting Season, Survey #4.

	Point Count Stations															
Species	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
White-winged Dove	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Mourning Dove	-	2	1	-	-	-	-	1	-	-	1	-	1	-	-	-
Vaux's Swift	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-
Ladder-backed Woodpecker	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Ash-throated Flycatcher	1	-	-	1	2	-	-	2	1	-	1		-	-	-	-
*Loggerhead Shrike	-	-	-	-	1	-	-	1	-	1	-	2	-	-	-	1
Common Raven	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Barn Swallow	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Verdin	1	1	-	3	1	-	-	-	1	-	2	-	1	2	1	2
Bewick's Wren	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Black-tailed Gnatcatcher	-	2	-	-	-	1	-	1	-	-	-	-	-	1	-	-
Yellow-rumped Warbler	-	-	-	1	-	-	2	-	-	-	-	-	-	-	-	-
Bullock's Oriole	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

5.0 SPECIAL-STATUS BIRD SPECIES

Several special-status bird species were encountered during this study, or are known from the area:

- ***Swainson's Hawk*** – On 14 April 2011, John Green observed one Swainson's Hawk (*Buteo swainsoni*) flying approximately 1000 feet west of point #3. This bird was a migrant. Swainson's Hawks migrate on a broad front, both spatially and temporally, across much of southern California, including the coastal slope as well as the deserts. The nearest known nesting location is the Antelope Valley, at the western end of the Mojave Desert (Bechard et al. 2010). Swainson's Hawk is listed by the State of California as Threatened.
- ***Gila Woodpecker*** – On 27 December 2010, a Gila Woodpecker (*Melanerpes uropygialis*) was observed by Chet McGaugh and Stephen J. Myers during the point count station setup. This bird was seen in ironwoods near points #9 and #10. No other observations of this species were made during the study. Grinnell and Miller (1944) stated that "availability of diggable tree-trunks for nesting seems to be [the] primary factor for presence" of this species. It seems unlikely that ironwoods would be suitable for nesting due to their extremely dense wood, but Gila Woodpeckers have also been known (rarely) to excavate cavities in palo verde (Bent 1939). Since blue palo verdes are uncommonly scattered throughout the Desert Harvest project site, there is at least a low probability that they nest on or near the site. A sighting of Gila Woodpecker was reported on 28 September 2010 from the Desert Sunlight Project, approximately 2 miles west of the Desert Harvest site (eBird data). The Gila Woodpecker is listed by the State of California as Endangered.
- ***Vermilion Flycatcher*** – This species is known as a nesting bird at nearby Lake Tamarisk (C. McGaugh pers. comm., Myers 2008), approximately three miles south of the project site. Vermilion Flycatchers (*Pyrocephalus rubinus*) were not observed on the site but use habitats such as riparian woodland, arid scrub, farms lands, agricultural areas, parks, and golf courses (Myers 2008), and they could nest within the wash habitats on the project site. The Vermilion Flycatcher is a California Department of Fish and Game (CDFG) "Species of Special Concern."
- ***Loggerhead Shrike*** – Loggerhead Shrikes were recorded 11 times during point counts (a total of 14 birds). They were recorded at point count station numbers 1, 3, 4, 5, 8, 9, 10, 11, 12, and 16, indicating a broad distribution across the project area. The Loggerhead Shrike is a California Department of Fish and Game "Species of Special Concern."
- ***Lucy's Warbler*** – On 14 April 2011, two singing male Lucy's Warblers (*Oreothlypis luciae*) were detected near the southwestern corner of the eastern project site parcel. These birds were heard and seen as Myers was accessing point count stations to the north. Lucy's Warbler is a California Department of Fish and Game "Species of Special Concern," and could nest on the project site. Grinnell and Miller (9144) noted that in California this species nests almost exclusively in mesquite thickets, and that they range only locally and temporarily into riparian habitats and into palo verdes and ironwoods.

Three other CDFG "Special Concern" species were detected during the *study: Osprey (Pandion haliaetus*), Sharp-shinned Hawk (*Accipiter striatus*), and Vaux's Swift (*Chaetura vauxi*). The Sharp-shinned Hawk was seen on 10 January 2011, and was presumed to be a wintering bird. Nesting habitat for the Sharp-shinned Hawk is coniferous forest (Garrett and Dunn 1981). The other two species were spring migrants. Ospreys nest near bodies of water that provide abundant fish, which are their main prey items. In California, nesting Ospreys are restricted to the northern half of the state (Poole et al. 2004) Vaux's Swift nests in coniferous forest in the Cascades, Sierra Nevada, and coast ranges south to Monterey and Kern counties (Hunter 2008). The special status afforded these species by CDFG only applies to nesting birds.

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APPENDIX A

DESERT HARVEST SOLAR PROJECT MAPS

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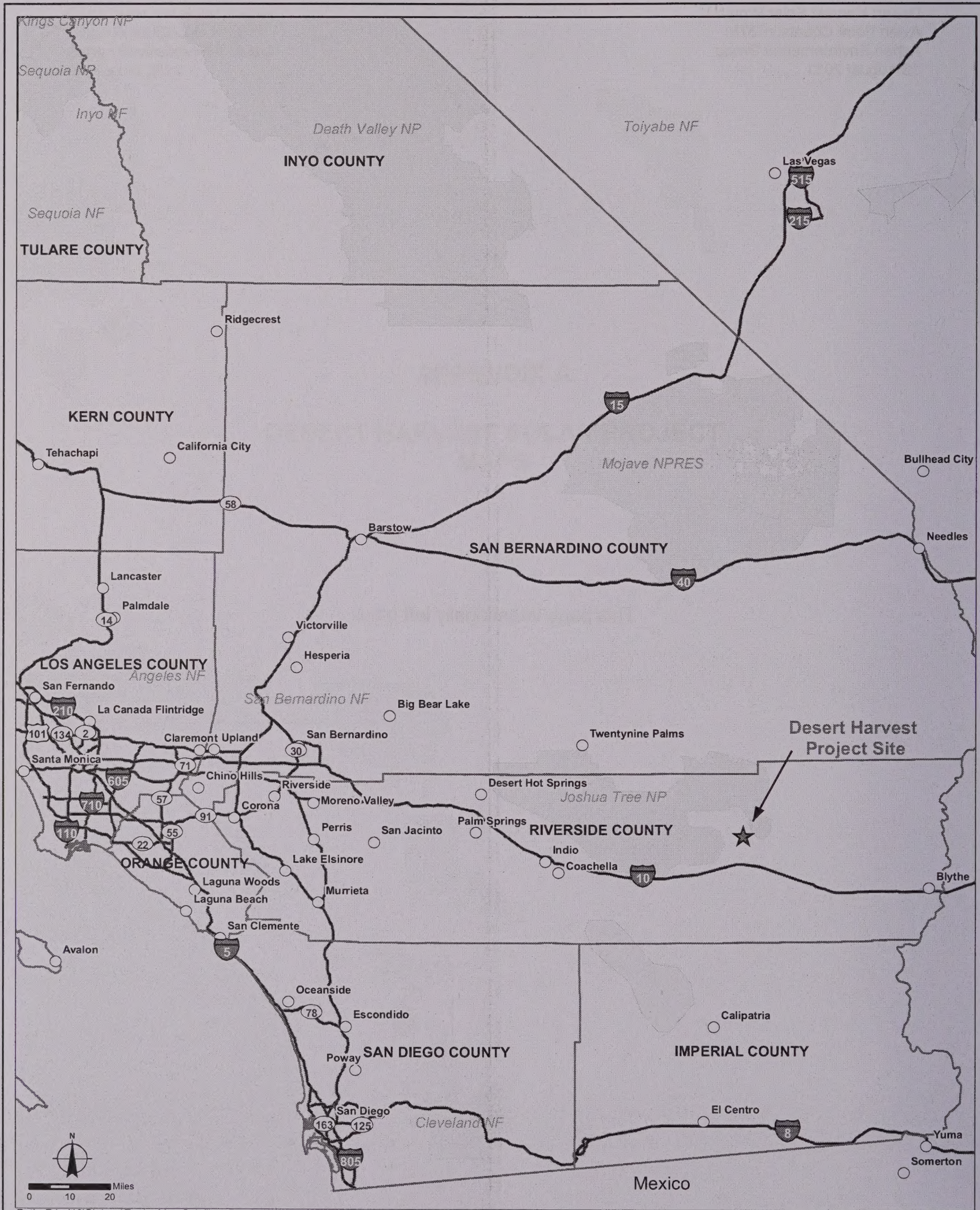

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Date: 4/13/2011

Regional Location
Desert Harvest Project

FIGURE

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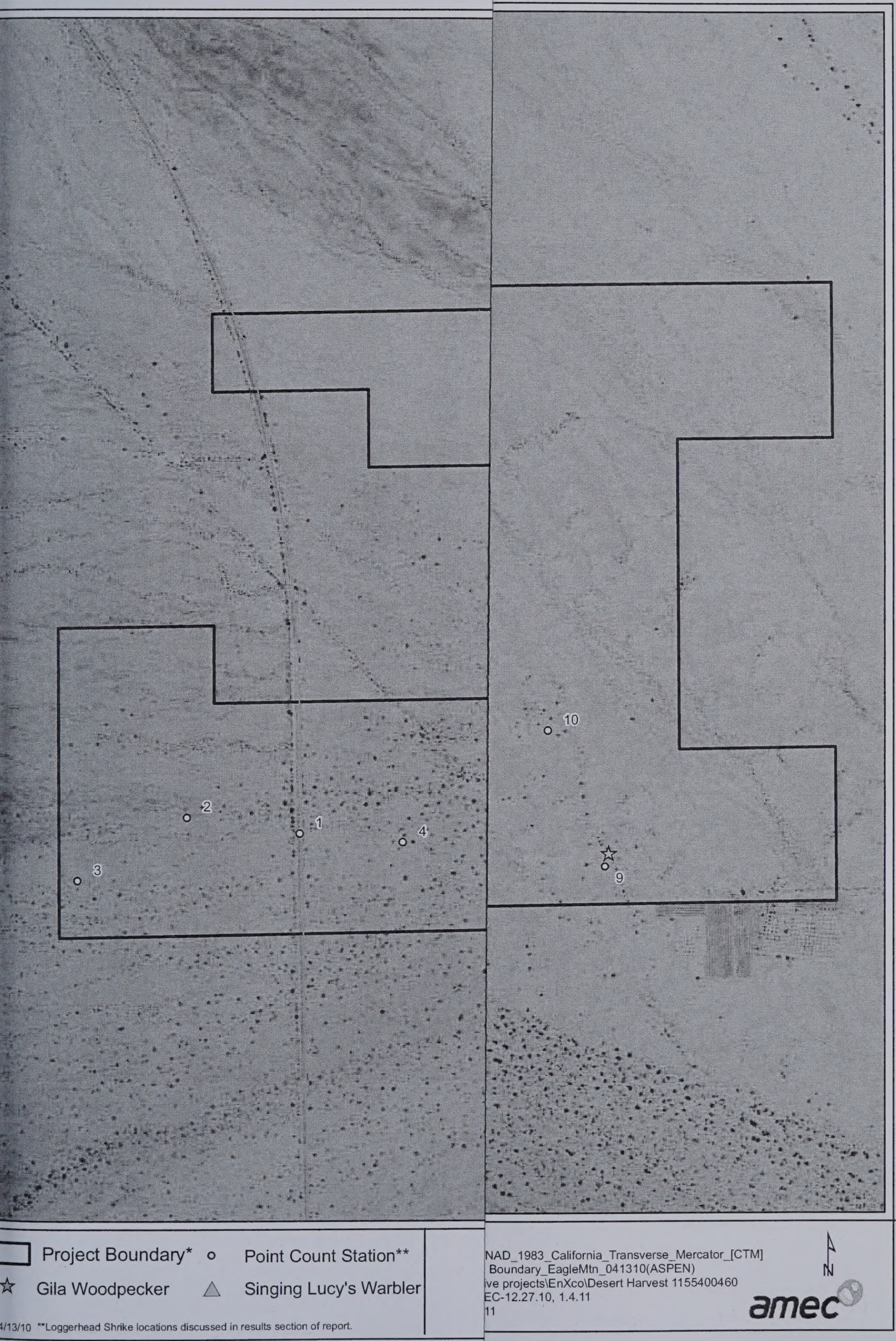

4/13/10 **Loggerhead Shrike locations discussed in results section of report.

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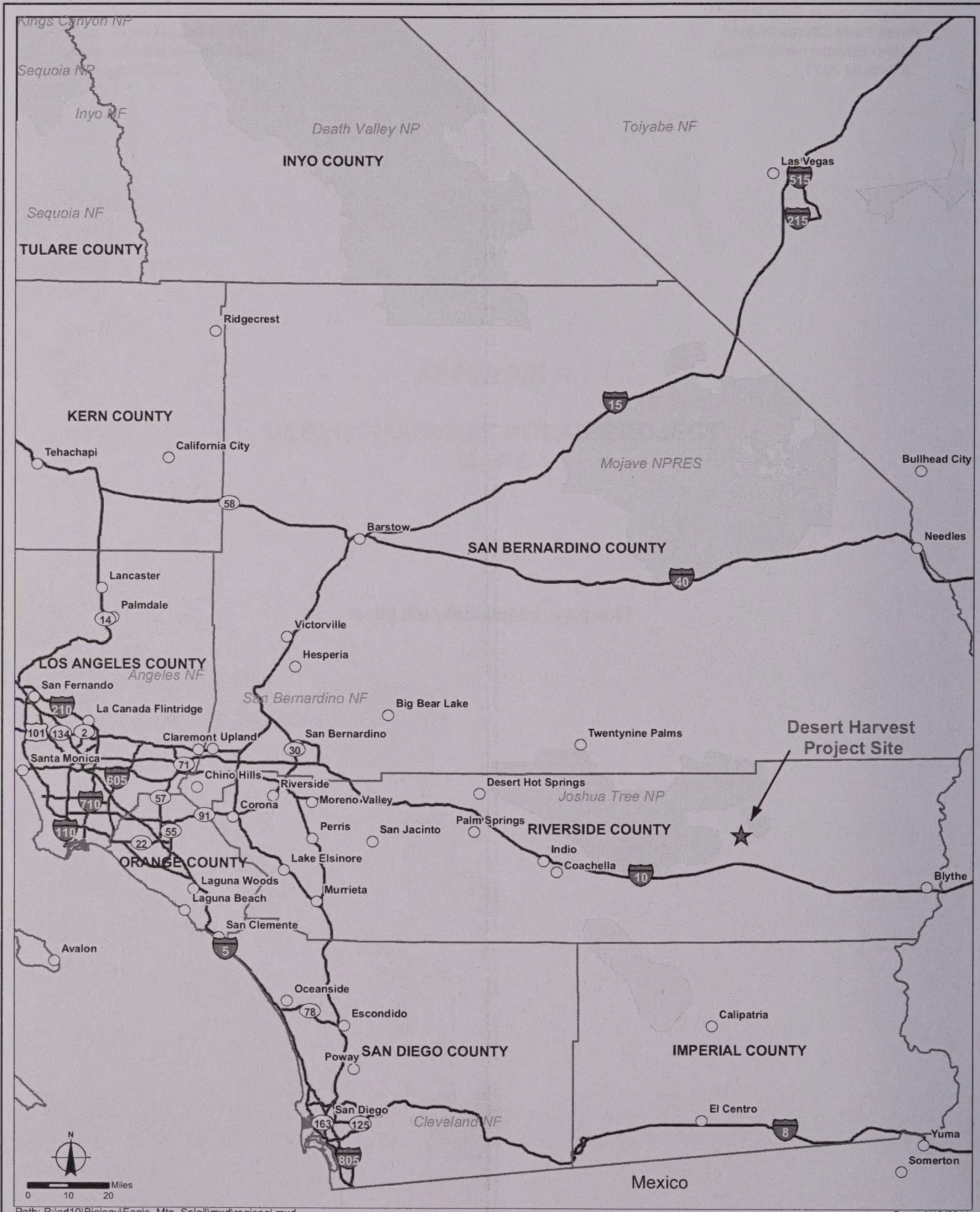
EC-12.27.10, 1.4.11
11

amec



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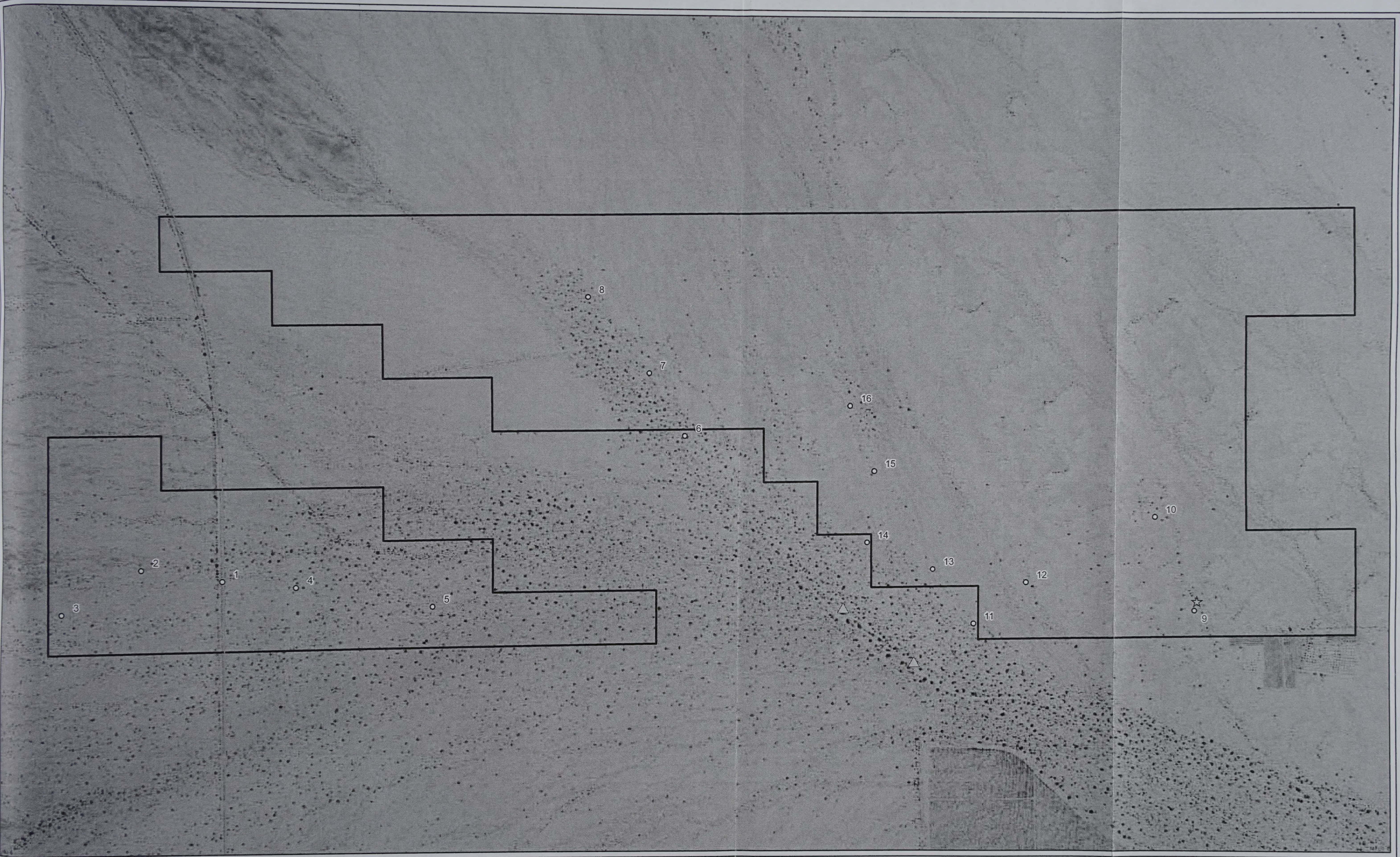
amec

Regional Location
Desert Harvest Project

FIGURE

1



☐ Project Boundary* ○ Point Count Station**

☆ Gila Woodpecker △ Singing Lucy's Warbler

04/13/10 **Loggerhead Shrike locations discussed in results section of report.

Desert Harvest Solar Project

Avian Point Count Stations & Sensitive Bird Species Locations

Figure 2

Data-
Projection: NAD_1983_California_Transverse_Mercator_[CTM]
Resources: Boundary_EagleMtn_041310(ASPEN)
Path:S:\active projects\EnXco\Desert Harvest 1155400460
Survey:AMEC-12.27.10, 1.4.11
Date: 8/16/11

amec

APPENDIX B

DESERT HARVEST SOLAR PROJECT BIRD SPECIES LIST

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APPENDIX B
BIRD SPECIES LIST

[Note: This list includes species detected during point counts and during point count setup and access. Species detected during point counts are marked with a †.]

BIRDS	**AVES**
New World Quail	**Odontophoridae**
Gambel's Quail	*Callipepla gambelii*
New World Vultures	**Cathartidae**
Turkey Vulture †	*Cathartes aura*
Ospreys	**Pandionidae**
Osprey	*Pandion haliaetus*
Hawks, Harriers, & Eagles	**Accipitridae**
Sharp-shinned Hawk	*Accipiter striatus*
Swainson's Hawk	*Buteo swainsoni*
Red-tailed Hawk †	*Buteo jamaicensis*
Falcons	**Falconidae**
American Kestrel†	*Falco sparverius*
Gulls, Terns, & Skimmers	**Laridae**
Unidentified gull (distant)	*Larus* sp.
Pigeons & Doves	**Columbidae**
Eurasian Collared-Dove (nonnative)	*Streptopelia decaocto*
White-winged Dove †	*Zenaida asiatica*
Mourning Dove †	*Zenaida macroura*
Cuckoos & Allies	**Cuculidae**
Greater Roadrunner	*Geococcyx californianus*
Swifts	**Apodidae**
Vaux's Swift †	*Chaetura vauxi*
Hummingbirds	**Trochilidae**
Anna's Hummingbird	*Calypte anna*
Woodpeckers	**Picidae**
Gila Woodpecker	*Melanerpes uropygialis*
Ladder-backed Woodpecker †	*Picoides scalaris*
Northern Flicker	*Colaptes auratus*

Tyrant Flycatchers	**Tyrannidae**
Gray Flycatcher †	*Empidonax wrightii*
Say's Phoebe†	*Sayornis saya*
Ash-throated Flycatcher †	*Myiarchus cinerascens*
Shrikes	**Laniidae**
Loggerhead Shrike †	*Lanius ludovicianus*
Jays, Magpies, & Crows	**Corvidae**
Common Raven †	*Corvus corax*
Larks	**Alaudidae**
Horned Lark †	*Eremophila alpestris*
Swallows	**Hirundinidae**
Tree Swallow †	*Tachycineta bicolor*
Violet-green Swallow †	*Tachycineta thalissina*
Cliff Swallow †	*Petrochildon pyrrhonota*
Barn Swallow †	*Hirunda rustica*
Penduline Tits & Verdins	**Remizidae**
Verdin †	*Auriparus flaviceps*
Wrens	**Troglodytidae**
Bewick's Wren †	*Thryomanes bewickii*
Kinglets	**Regulidae**
Ruby-crowned Kinglet †	*Regulus calendula*
Old World Warblers & Gnatcatchers	**Sylviidae**
Blue-gray Gnatcatcher †	*Polioptila caerulea*
Black-tailed Gnatcatcher †	*Polioptila melanura*
Mockingbirds, Thrashers, & Allies	**Mimidae**
Northern Mockingbird †	*Mimus polyglottos*
Wagtails & Pipits	**Motacillidae**
American Pipit †	*Anthus rubescens*
Silky-Flycatchers	**Ptilogonatidae**
Phainopepla †	*Phainopepla nitens*
Parulidae	**Wood-Warblers**
Orange-crowned Warbler	*Oreothlypis celata*
Lucy's Warbler	*Oreothlypis luciae*
Yellow-rumped Warbler †	*Setophaga coronata*

Emberizids	**Emberizidae**
Brewer's Sparrow	*Spizella breweri*
Black-throated Sparrow †	*Amphispiza bilineata*
White-crowned Sparrow †	*Zonotrichia leucophrys*
Blackbirds & Allies	**Icteridae**
Bullock's Oriole	*Icterus bullockii*
Scott's Oriole	*Icterus parisorum*
Finches	**Fringillidae**
House Finch †	*Carpodacus mexicanus*
Lesser Goldfinch †	*Spinus psaltria*

Appendix C.5

Aspen Fall 2010 Botanical Survey Memo

Aspen
Environmental Group

201 North First Ave., Suite 102, Upland, CA 91786
Tel. 909-949-3686, www.aspeneg.com

PROJECT MEMORANDUM
ENXCO DESERT HARVEST PROPOSED SOLAR PROJECT

To: Ian Black, enXco
From: Scott D. White, Aspen Project Manager
Date: April 18, 2011
Subject: Desert Harvest project site, fall 2010 botanical surveys

This memorandum describes methods and results of Aspen's late-season (fall 2010) botanical surveys at the proposed Desert Harvest solar project site. These late-season surveys cover the entire Right of Way Application (consisting of two discontiguous parcels, described below). The larger, eastern parcel was surveyed for rare plants during spring 2010 by AMEC Earth & Environmental Inc., as documented in *Desert Harvest Spring 2010 Focused Special-Status Plant Species Survey* (AMEC 2011). Two special status plants were reported on the site: Emory's crucifixion thorn (*Castela emoryi*) and Utah vine milkweed (*Funastrum* [=*Cynanchum*] *utahense*). The AMEC report recommended fall surveys for late flowering glandular ditaxis (*Ditaxis claryana*) and California ditaxis (*D. serrata* var. *californica*). This memorandum serves as a supplement to the AMEC spring report and focuses on these two fall-blooming target species. Conservation status, habitat characteristics, and probability of occurrence for special status plants on the Desert Harvest site are summarized by AMEC (2011). Each of these species is ranked as a special status by California Department of Fish and Game (CDFG) or California Native Plant Society (CNPS). But none of the species documented on the site or targeted for these field surveys are listed, proposed for listing, or candidates for listing as threatened or endangered, nor are they managed by the Bureau of Land Management (BLM) as sensitive species.

The Desert Harvest site is located on public lands administered by BLM in unincorporated Riverside County, approximately 6 miles north of Desert Center, California (see Figure 1 in AMEC 2011). The Right of Way Application consists of two non-contiguous parcels (see Figure 1 in this memorandum). The eastern parcel is 1,057 acres and the western parcel is 270 acres. The AMEC surveys in spring 2010 covered only the larger, eastern parcel. The late-season surveys described in this memorandum covered both parcels. Follow-up spring season surveys on the smaller, western parcel are now underway. Upon completion of the 2011 spring field surveys, Aspen will provide a full report describing the methods and results of all botanical surveys at the Desert Harvest site.

The primary target species for these field surveys were glandular ditaxis and California ditaxis. In addition, all special status plants included in Appendix A of the AMEC (2011) report were considered secondary target species, though most of these would be unlikely to be found in flower during fall. Further, the distribution and abundance of many fall-flowering species in the California desert is incompletely documented in literature due to a historic emphasis on spring, rather than fall, field work. Yet a significant proportion of the flora is made up of annual species that germinate in response to summer rains, or perennial herbs that may flower at any time of year, depending on rainfall (Shreve and Wiggins 1964; Phillips and Comus 2000). Therefore, these late-season field surveys were conducted to find and identify as many species as possible, to maximize the likelihood that species not known from the area, or not included on a list of "target species" would be documented if they occur on the site. This approach to field work conforms to CDFG (2009) and BLM (2009) guidelines recommending "floristic" botanical surveys and provides the most thorough practicable botanical inventory of the Right of Way Application.

Average annual rainfall at the Eagle Mountain weather station, about 2.5 miles from the site, is 3.68 inches (WRCC 2011). On average, August is the wettest month, though WRCC reported no measureable rainfall at the station in August 2010. Average precipitation at the Eagle Mountain station during the months of July – October is 1.35 inches (37% of the average annual total). In 2010, there was a total of 1.23 inches of rainfall during this period, almost all of which fell during October.

METHODS

Before the field survey, we reviewed available literature to identify special status plants known from the project site and vicinity. Literature included California Natural Diversity Data Base (CDFG 2010, USGS Victory Pass, East of Victory Pass, Desert Center, Corn Spring, Coxcomb Mountains, Pinto Wells, Placer Canyon, Buzzard Spring, West of Palen Pass, Palen Lake and Sidewinder Well topographic quads), California Native Plant Society's *Online Inventory of Rare and Endangered Vascular Plants of California 8th ed.* (2010, for the same quads) and the preliminary results of AMEC's spring 2010 field surveys.

Field survey dates were based on known collection dates for glandular ditaxis and California ditaxis according to vouchered specimens (Consortium of California Herbaria 2010) and on 2010 late-season rainfall dates (primarily October). Aspen biologists Justin Wood and Dustin Ray conducted field surveys on the following dates: 21 Oct, 22 Oct, 1 Nov and 2 Nov 2010.

Field methods followed the "intuitive controlled survey" methods, described by BLM (2009). Wood and Ray carried out a complete survey of washes and any low-lying areas throughout the two parcels where runoff from summer rains would have been most concentrated, and a less intense survey of upland bajada and desert pavement surfaces. There were no summer annuals and only few flowering perennials on these upland surfaces, and field botanists concluded that there was little likelihood of finding special status plants or more common species not documented in washes or during earlier field surveys.

All plant species observed were identified in the field or collected for later identification. Plants were identified using keys, descriptions, and illustrations in Abrams (1923-1960), Shreve and Wiggins (1964), Munz (1974), Hickman (ed., 1993), applicable volumes of the Flora of North America (1993+), Baldwin et al. (eds., 2002), and other regional references. All species noted on the alignment are listed in the attached species list. In conformance with California Department of Fish and Game guidelines (2009), surveys were (a) conducted during flowering seasons for the late-flowering special status plants known from the area, (b) floristic in nature, (c) consistent with conservation ethics, (d) systematically covered all habitat types on the Right of Way, and (e) well documented, by this report and by voucher specimens to be deposited at Rancho Santa Ana Botanic Garden. Locations of special status plants will be reported to the CDFG Natural Diversity Data Base (copies of report forms attached).

RESULTS

Very few plants were in flower during the fall survey period. Rainfall during July – September has been well below average and summer annuals had evidently not germinated or persisted. The 1.17 inches of rain in October 2010 may have been too late to initiate germination among summer annual species.

Vegetation on the western site (not surveyed during spring 2010) is similar to that of the eastern site, with Creosote Bush-White Burr Sage Scrub (Sawyer et al. 2009) predominating. Intermixed with the Creosote Bush-White Burr Sage Scrub are areas of Smoke Tree Woodland. Both of these vegetation types are described in AMEC (2011) and the Manual of California Vegetation (Sawyer et al. 2009).

Within the smaller, western project area, we located 15 individuals of one special status species, Emory's crucifixion thorn. It occurred primarily in a single stand (see Figure 1). Three other individuals were reported by AMEC (2011) in the eastern project area. All occurrences of Emory's crucifixion thorn reported by AMEC and Aspen are shown in Figure 1. Emory's crucifixion thorn is assigned to California Rare Plant Rank (CRPR, formerly CNPS List) 2.3 (rare, threatened, or endangered in California, but more common elsewhere). It is not managed by BLM as a sensitive species (BLM 2009).

We did not locate either target species, glanduar ditaxis and California ditaxis on either of the two parcels, although we found two closely related species, common ditaxis (*Ditaxis neomexicana*) and Yuma ditaxis (*D. serrata* var. *serrata*) throughout the larger, eastern parcel. Neither of these species is ranked by BLM, USFWS, CDFG or CNPS as a special status species. Specimens of both species have been deposited in the Herbarium at Rancho Santa Ana Botanic Garden as permanent documentation.

During our field surveys of the eastern Right of Way parcel, we visited the location where Utah vine milkweed was mapped by AMEC. At this location, we found a closely related species, hairy milkweed (*Funastrum* [=*Sarcostemma*] *hirtellum*), but we did not find Utah vine milkweed. We identified the specimen by flower color and technical characters of flower structure (Baldwin et al. 2002). A specimen has been deposited in the Herbarium at Rancho Santa Ana Botanic Garden as permanent documentation. It is possible that both species occur at approximately the same location, or that the report of Utah vine milkweed may have been based on a misidentification of the similar hairy milkweed. Hairy milkweed has no special conservation status. Utah vine milkweed is assigned to CRPR 4.2 (limited distribution, "watch list"). It is not managed by BLM as a sensitive species (BLM 2009).

Please contact me any time to discuss or clarify any of the information in this memorandum.

Encl.

1. Literature Cited
2. Figure 1: Occurrences of Crucifixion Thorn within Desert Harvest proposed sites.
3. Appendix 1: Species List
4. Appendix 2: CNDDB Search Results and Report Form

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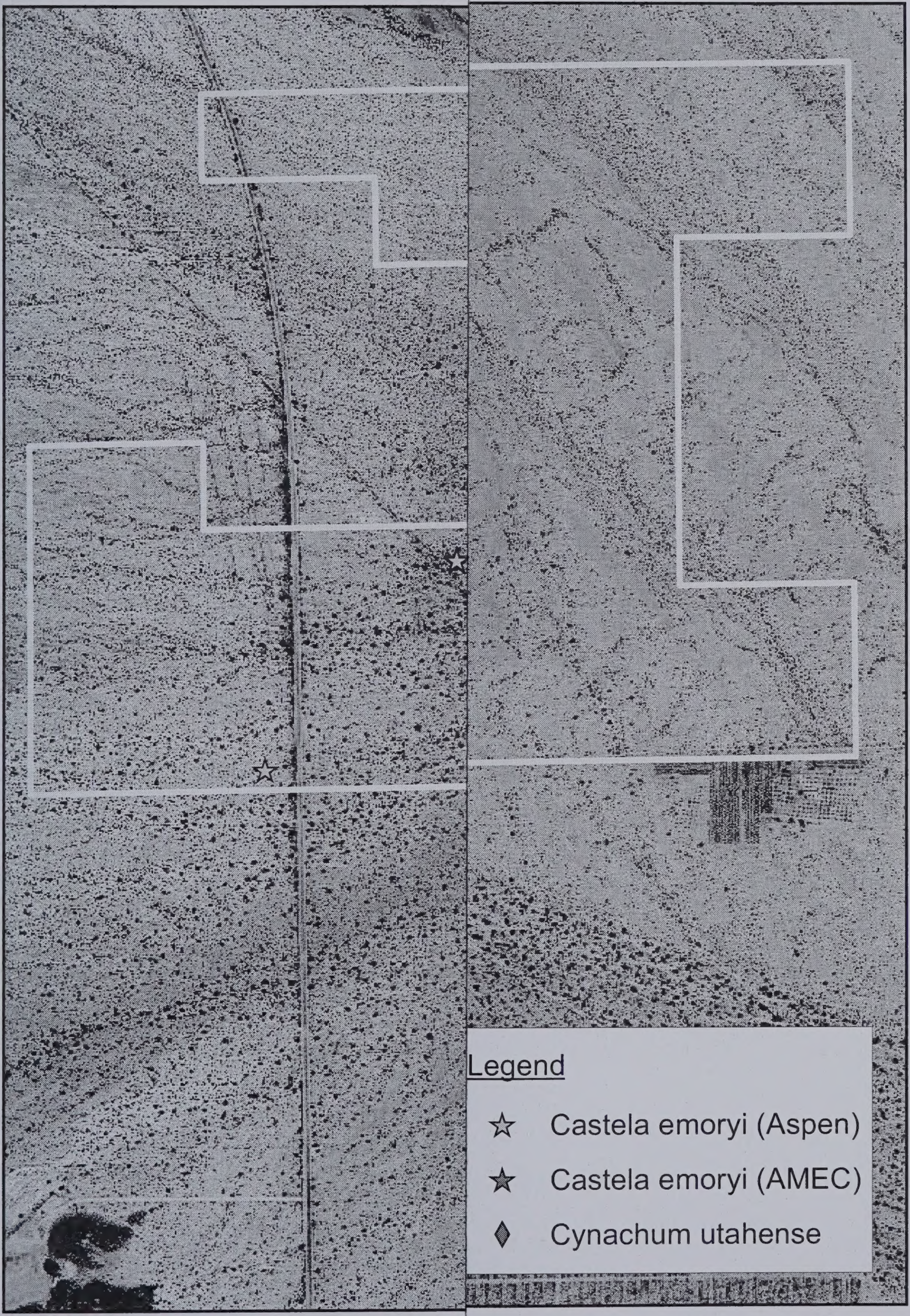

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Scale: 1 " = 1,10

Date: 4/18/2011

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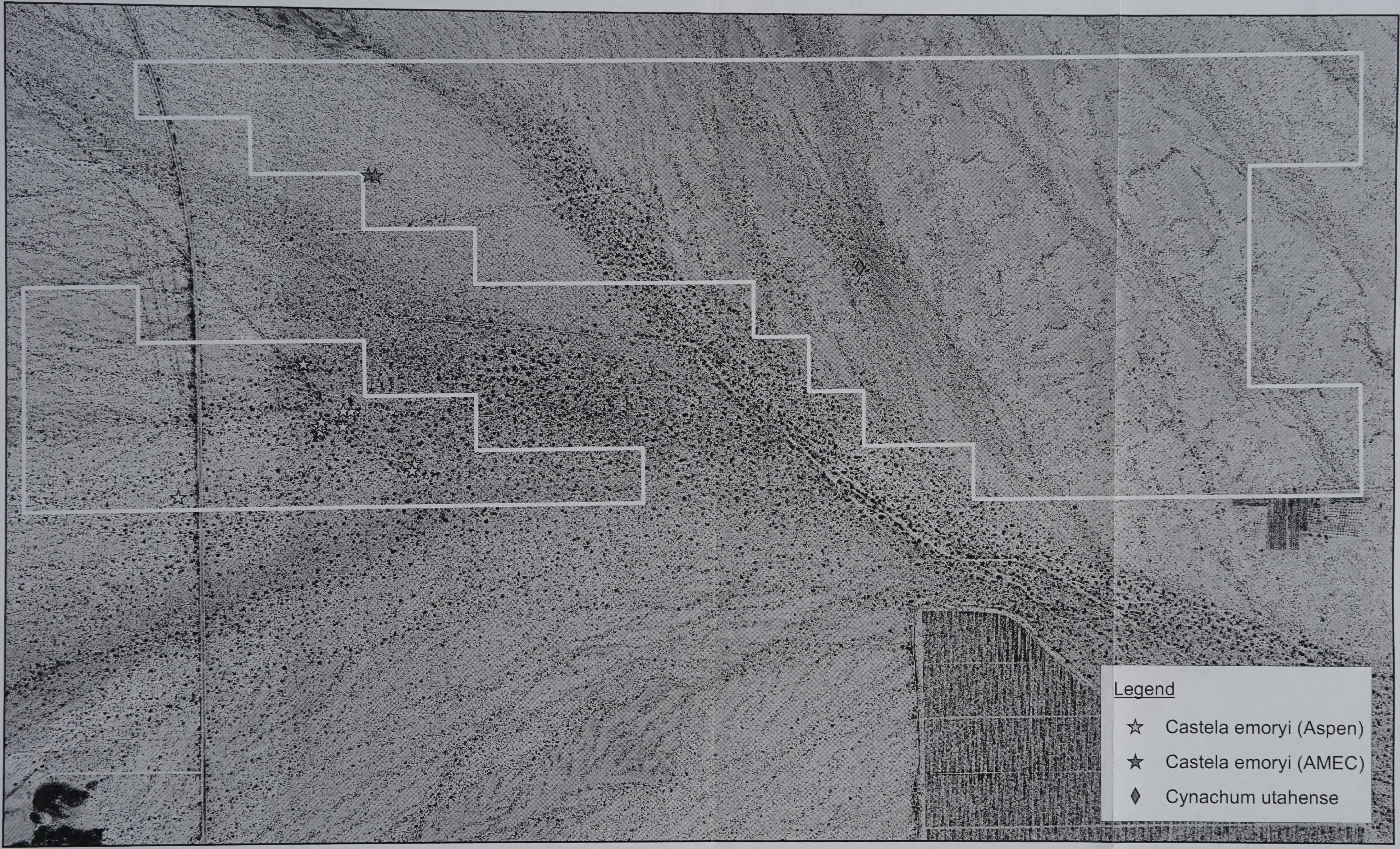

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Scale: 1 " = 1,100 '

Date: 4/18/2011

N

0 550 1,100 2,200
Graphical Scale Feet

Figure 1: Special-status plant occurrences within Desert Harvest Right of Way

Appendix 1: enXco Desert Harvest Proposed Solar Site Species List

Alien species indicated by asterisk, special status species indicated by two asterisks. This list includes only species observed on the site. Others may have been overlooked or unidentifiable due to season (amphibians are active during rains, reptiles during summer, some birds (and bats) migrate out of the area for summer or winter, some mammals hibernate, many plants are identifiable only in spring). Plants were identified using keys, descriptions, and illustrations in Abrams (1923-1960), Baldwin et al. (2002), and Munz (1974). Taxonomy and nomenclature generally follow Baldwin. Wildlife taxonomy and nomenclature generally follow Stebbins (2003) for amphibians and reptiles, AOU (1998) for birds, and Jones et al. (1992) for mammals. Specimens donated as vouchers to the UC

	Latin Name	**Common Name**	**Voucher**
	AMARANTHACEAE	AMARANTH FAMILY	
	Tidestromia oblongifolia	Honeysweet	3038
	(T. suffriticosa var. oblongifolia)		
	ASCLEPIADACEAE	MILKWEED FAMILY	
	Asclepias erosa	Desert milkweed	2999
	Asclepias subulata	Rush milkweed	3029
	Sarcostemma hirtellum	Rambling milkvine	3022
	ASTERACEAE	ASTER FAMILY	
	Ambrosia dumosa	White bursage, burrobush	
	Bebbia juncea	Sweetbush	3023
#	*Chaenactis carphoclina*	Pincushion	
#	*Chaenactis fremontii*	Fremont pincushion	
#	*Chaenactis stevioides*	Broad-flowered pincushion	
	Encelia actoni	Acton brittlebush	
	Encelia farinosa	Brittlebush	
	Encelia frutescens	Rayless encelia	3060
#	*Gerea canescens*	Desert sunflower	
#	*Hymenoclea salsola*	Cheesebush	
#	*Malacothrix glabrata*	Desert dandelion	
#	*Monoptilon bellioides*	Desert star	
	Palafoxia arida	Spanish needles	3003
	Pectis papposa	Chinchweed	2997
	Perityle emoryi	Emory rock-daisy	2994
#	*Psathrotes ramosissima*	Velvet rosettes, turtleback	
#	*Rafinesquia neomexicana*	Desert chicory	
	BORAGINACEAE	BORAGE FAMILY	
	Cryptantha angustifolia	Narrowleaf cryptantha	
	Cryptantha barbigera	Bearded cryptantha	
#	*Cryptantha dumetorum*	Twining cryptantha	
#	*Pectocarya platycarpa*	Broad-fruited comb-bur	
#	*Pectocarya recurvata*	Recurved pectocarya	
#	*Tiquilia plicata (Coldenia plicata)*	Plicate tiquilia	
	BRASSICACEAE	MUSTARD FAMILY	
*	*Brassica tournefortii*	Sahara mustard, wild turnip	
	Lepidium spp.	Unid. pepper-grass	
#	*Lepidium lasiocarpum (?)*	Sand peppergrass	

# denotes species found during spring 2010 Amec surveys.

Appendix 1: enXco Desert Harvest Proposed Solar Site Species List

	CACTACEAE	CACTUS FAMILY	
	Ferocactus cylindraceus	California barrel cactus	
	Opuntia basilaris v. basilaris	Beavertail cactus	
	Cylindropuntia echinocarpa	Silver cholla	
	Cylindropuntia ramosissima	Pencil cholla	
#	*Achyronychia cooperi*	Onyx flower	
#	*Chenopodium sp.*	Unidentified goosefoot	
	CUCURBITACEAE	GOURD FAMILY	
	Brandegea bigelovii	Brandegea	
	EUPHORBIACEAE	SPURGE FAMILY	
#	*Chamaesyce albomarginata (Euphorbia albomarginata)*	Rattlesnake spurge	
	Chamaesyce micromera	Sonoran sandmat	3006
	Chamaesyce polycarpa	Sand mat	3004
	Croton californicus	California croton	3024
#	*Ditaxis lanceolata*	Narrow-leaved ditaxis	
	Ditaxis neomexicana	Common ditaxis	3030
	Ditaxis serrata	Yuma ditaxis	3000
#	*Stillingia linearifolia*	Linear-leaved stillingia	
	Stillingia spinulosa	Annual stillingia	2993
	FABACEAE	PEA FAMILY	
	Acacia greggii	Catclaw acacia	
	Cercidium floridum	Blue palo verde	3059
	Dalea mollis	Silk dalea	3027
#	*Dalea mollissima*	Rust dalea	
#	*Lupinus arizonicus*	Arizona lupine	
#	*Lupinus sp.*	Unid. annual lupine	
#	*Marina parryi*	Parry dalea	
	Olneya tesota	Desert ironwood	
#	*Parkinsonia florida*	Blue palo verde	
	Psorothamnus emoryi (Dalea emoryi)	Emory indigo-bush, dye-weed	3002
	Psorothamnus schottii (Dalea schottii)	Indigo-bush	
#	*Fouquieria splendens*	Ocotillo	
	KRAMERIACEAE	KRAMERIA FAMILY	
	Krameria grayii	White rhatany	3063
	LAMIACEAE	MINT FAMILY	
	Hyptis emoryi	Desert lavender	3062
#	*Eremalche rotundifolia*	Desert fivespot	
	MARTYNIACEAE	UNICORN PLANT FAMILY	
	Proboscidea althaeifolia	Unicorn plant	
	NYCTAGINACEAE	FOUR O'CLOCK FAMILY	
#	*Abronia villosa var. villosa*	Sand verbena	
	Alliona incarnata	Trailing windmills	2992
	ONAGRACEAE	EVENING PRIMROSE FAMILY	
	Camissonia boothii	Desert primrose	

# denotes species found during spring 2010 Amec surveys.

Appendix 1: enXco Desert Harvest Proposed Solar Site Species List

	ssp. desertorum		
	Camissonia claviformis	Clavate evening primrose	
#	*Camissonia sp.*	Unidentified primrose	
	PAPAVERACEAE	POPPY FAMILY	
#	*Eschscholzia minutiflora*	Small-flowered poppy	
	PLANTAGINACEAE	PLANTAIN FAMILY	
	Plantago ovata	Desert plantain	
	POLEMONIACEAE	PHLOX FAMILY	
#	*Gilia latifolia*	Broad-leaved gilia	
#	*Loeseliastrum schottii*	Schott's langloisia	
	POLYGONACEAE	BUCKWHEAT FAMILY	
#	*Chorizanthe brevicornu*	Brittle spine-flower	
#	*Chorizanthe corrugata*	Wrinkled spineflower	
	Chorizanthe rigida	Rigid spine-flower	3061
	Eriogonum deflexum	Skeleton weed	2990
	Eriogonum pusillum	Puny buckwheat	
#	*Eriogonum reniforme*	Kidney-leaved buckwheat	
	PORTULACACEAE	PURSLANE FAMILY	
	Calyptridium monandrum	Common calyptridium	
#	*Oligomeris linifolia*	Narrowleaf oligomeris	
	SIMAROUBACEAE		
**	*Castela emoryi*	Crucifixion thorn	2991
	SOLANACEAE	NIGHTSHADE FAMILY	
	Datura discolor	Jimsonweed, desert thorn-apple	3058
	Physalis crassifolia	Thick-leaf ground cherry	2998
	ZYGOPHYLLACEAE	CALTROP FAMILY	
#	*Fagonia laevis*	Smooth-stem fagonia	
#	*Fagonia pachyacantha*	Glandular fagonia	
	Kallstroemia californica	California caltrop	3026
	Larrea tridentata	Creosote bush	
#	*Tribulus terrestris*	Puncture vine	
	ARECACEAE	PALM FAMILY	
#	*Phoenix dactylifera*	Date palm	
	LILIACEAE	LILY FAMILY	
#	*Calochortus sp.*	Unid. Mariposa lily	
#	*Hesperocallis undulata*	Desert lily	
	Zigadenus brevibracteatus	Desert zigadene	
	POACEAE	GRASS FAMILY	
	Aristida californica	California three-awn	2995
	Aristida purpurea	Three-awn grass	
	Bouteloua aristidoides	Needle grama	2996
	Pleuraphis rigida (Hilaria rigida)	Big galleta	
*	*Schismus barbatus*	Mediterranean schismus	

# denotes species found during spring 2010 Amec surveys.

California Department of Fish and Game
Natural Diversity Database
Desert Harvest and Surrounding Quads
Victory Pass, East of Victory Pass, Desert Center, Corn Spring, Coxcomb Mountains, Pinto Wells, Placer Canyon, Buzzard Spring, Hayfield Spring, West of Palen Pass, Palen Lake, Sidewinder Well

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	***Ammoselinum giganteum*** desert sand-parsley	PDAPI05020			G2G3	SH	2.3
2	***Astragalus insularis var. harwoodii*** Harwood's milk-vetch	PDFAB0F491			G5T3	S2.2?	2.2
3	***Ayenia compacta*** California ayenia	PDSTE01020			G4	S3?	2.3
4	***Castela emoryi*** Emory's crucifixion-thorn	PDSIM03030			G2G3	S2S3	2.3
5	***Colubrina californica*** Las Animas colubrina	PDRHA05030			G4	S2S3.3	2.3
6	***Coryphantha alversonii*** Alverson's foxtail cactus	PDCAC0X060			G3	S3.2	4.3
7	***Ditaxis claryana*** glandular ditaxis	PDEUP080L0			G4G5	S1	2.2
8	***Ditaxis serrata var. californica*** California ditaxis	PDEUP08050			G5T2T3	S2	3.2
9	***Eriastrum harwoodii*** Harwood's eriastrum	PDPLM030B1			G2	S2	1B.2
10	***Grusonia parishii*** Parish's club-cholla	PDCAC0D2H0			G3G4	S2	2.2
11	***Koeberlinia spinosa ssp. tenuispina*** slender-spined all-thorn	PDCPP05012			G4T4	S2.2	2.2
12	***Matelea parvifolia*** spear-leaf matelea	PDASC0A0J0			G5?	S2.2	2.3
13	***Mentzelia puberula*** Darlington's blazing star	PDLOA031F0			G4	S2	2.2
14	***Salvia greatae*** Orocopia sage	PDLAM1S0P0			G2	S2	1B.3
15	***Selaginella eremophila*** desert spike-moss	PPSEL010G0			G4	S2.2?	2.2
16	***Senna covesii*** Cove's cassia	PDFAB491X0			G5?	S1	2.2
17	***Stylocline sonorensis*** mesquite neststraw	PDAST8Y060			G3G5	SX	1A
18	***Teucrium cubense ssp. depressum*** dwarf germander	PDLAM20032			G4G5T3T4	S2	2.2
19	***Wislizenia refracta ssp. palmeri*** Palmer's jackass clover	PDCPP09015			G5T2T4	S2?	2.2

Mail to:
California Natural Diversity Database
Department of Fish and Game
1807 13th Street, Suite 202
Sacramento, CA 95811
Fax: (916) 324-0475   email: CNDDB@dfg.ca.gov

For Office Use Only
Source Code ________ Quad Code ________
Elm Code ________ Occ. No. ________
EO Index No. ________ Map Index No. ________

Date of Field Work (mm/dd/yyyy): 10/21/2010

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Castela emoryi*

Common Name: crucifixion thorn

Species Found? ☑ Yes ☐ No ________ If not, why?
Total No. Individuals 10   Subsequent Visit? ☐ yes ☑ no
Is this an existing NDDB occurrence? ________ Yes, Occ. # ☐ no ☑ unk.
Collection? If yes: 2991 Number   RSA-POM Museum / Herbarium

Reporter: Justin M. Wood
Address: 201 North First Ave. No. 102
Upland, CA 91786
E-mail Address: Jwood@aspeneg.com
Phone: (909) 568-5235

Plant Information
Phenology: 75 % vegetative   0 % flowering   25 % fruiting

Animal Information
________ # adults   ________ # juveniles   ________ # larvae   ________ # egg masses   ________ # unknown
☐ breeding ☐ wintering ☐ burrow site ☐ rookery ☐ nesting ☐ other

Location Description** **(please attach map AND/OR fill out your choice of coordinates, below)

County: Riverside   Landowner / Mgr.: Private
Quad Name: Victory Pass   Elevation: 205 m
T 45 R 15E Sec 27, SE ¼ of ______ ¼, Meridian: H☐ M☐ S☐   Source of Coordinates (GPS, topo. map & type): GPS
T ____ R ____ Sec ____, ____ ¼ of ______ ¼, Meridian: H☐ M☐ S☐   GPS Make & Model Garmin 60CSx
DATUM: **NAD27** ☐ **NAD83** ☐ **WGS84** ☑   Horizontal Accuracy ±15ft meters/feet
Coordinate System: UTM Zone 10 ☐ UTM Zone 11 ☐ ***OR*** Geographic (Latitude & Longitude) ☑
Coordinates: 33°47'26.4"N 115°24'13.2"W

Habitat Description *(plant communities, dominants, associates, substrates/soils, aspects/slope):*
Creosote scrub on packed sandy soils.

Other rare taxa seen at THIS site on THIS date:
(separate form preferred)

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☑ Good ☐ Fair ☐ Poor
Immediate AND surrounding land use: Date farm, private residences
Visible disturbances:
Threats: In vicinity of proposed solar field
Comments:

Determination: *(check one or more, and fill in blanks)*
☑ Keyed (cite reference): Hickman 1993
☐ Compared with specimen housed at: ________
☐ Compared with photo / drawing in: ________
☐ By another person (name): ________
☐ Other: ________

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? yes ☐ no ☐

Appendix C.6

Biological Resources Technical Report

Biological Resources Technical Report
Desert Harvest Solar Project

Prepared for:

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January, 2012

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ACRONYMS AND ABBREVIATIONS

Area of Critical Environmental Concern	ACEC
AMEC Earth & Environmental, Inc.	AMEC
Aspen Environmental Group	Aspen
Bald and Golden Eagle Protection Act	BGEPA
Bureau of Land Management	BLM
Biological Resources Technical Report	BRTR
California Burrowing Owl Consortium	CBOC
California Department of Fish and Game	CDFG
California Environmental Quality Act	CEQA
California Endangered Species Act	CESA
California Rare Plant Rank	CRPR
California Native Plant Society	CNPS
California Natural Diversity Data Base	CNDDB
Centimeter	cm
Desert Harvest Solar Project	DHSP
Desert Wildlife Management Area	DWMA
Environmental Impact Statement	EIS
Federal Endangered Species Act	ESA or federal ESA
Generator tie-line	gen-tie
Geographic Information System	GIS
Global Positioning System	GPS
Inch	in
Joshua Tree National Park	JTNP
Meter	m
Migratory Bird Treaty Act	MBTA
Mile	Mi
National Agriculture Imagery Program	NAIP
National Environmental Policy Act	NEPA
North American Datum of 1983	NAD83
Northern & Eastern Colorado Desert Coordinated Management Plan	NECO
Record of Decision	ROD
Right-of-way	ROW
United States Department of Agriculture	USDA
United States Fish and Wildlife Service	USFWS
United States Geological Survey	USGS
University of California	UC
Western Regional Climate Center	WRCC
Wildlife Habitat Management Area	WHMA
Zone of influence	ZOI

PROJECT OVERVIEW

The Desert Harvest Solar Project (DHSP) site is located in the upper Chuckwalla Valley, on public lands administered by the Bureau of Land Management (BLM) in unincorporated Riverside County, approximately 6 miles north of Desert Center, California (Township 4 South, Range 15 East, Sections 25, 26, 27, USGS 7.5' Victory Pass and East of Victory Pass quadrangles). The Right-of-Way Application consists of two non-contiguous parcels (Figure 1). The large, northeastern parcel is 1,070 acres and the smaller, southwestern parcel is 270 acres. Portions of each parcel extend to the west of Kaiser Road (County Route R2); enXco does not propose to construct solar facilities within the Kaiser Road right of way, or west of Kaiser Road. With these areas excluded from the analysis, the total area addressed in this report is approximately 1,208 acres, consisting of 1051 acres in the larger parcel, and 157 acres in the smaller one.

The Project site is now undeveloped, natural open space. The surrounding area consists primarily of public lands managed by the BLM, with scattered smaller private land parcels to the south and east. The Desert Sunlight Solar Project, now under construction, is located to the immediate north of the Desert Harvest site (Figure 2). The Desert Sunlight project was recently approved (BLM 2011a; 2011b) and will occupy 3,761 acres when fully built out. Public lands to the west of Kaiser Road, adjacent to the Desert Harvest site, are within a BLM Desert Wildlife Management Area (DWMA), designated in the Northern & Eastern Colorado Desert Coordinated Management Plan (NECO; BLM and CDFG 2002). The Palen-Ford WHMA, also designated in the NECO, is generally east of the site, but approximately 46 acres of the WHMA are within the project site (see Figure 6). Some of the private lands to the south and west have been developed as residential and agricultural lands uses. These include active and inactive jojoba fields, rural residential lands, and the community of Lake Tamarisk.

Joshua Tree National Park (JTNP) surrounds the upper Chuckwalla Valley on the north, east, and west. To the north, the JTNP boundary is about 7 miles from the northern boundary of the Desert Harvest ROW, and about 4.5 miles north of the approved Desert Sunlight project boundary. The Coxcomb Mountains, in the southeastern corner of JTNP, are located about 1.8 miles northeast of the northeastern corner of the Desert Harvest ROW. To the west, the JTNP boundary is about 3.5 miles from the western boundary of the Desert Harvest site, at Kaiser Road.

In addition to the proposed solar generator, this report addresses four alternate generator tie-line (gen-tie) alignments which would deliver electrical power from the Desert Harvest project site to Southern California Edison's Red Bluff Substation, now under construction. The alternative alignments are shown on Figure 2.

- The Applicant's proposed generator tie-line would be on shared alignment and ROW with the approved Desert Sunlight gen-tie line, to be constructed on the same poles. This proposed alignment is described here and in the Project Environmental Impact Statement (EIS) as Alternative B. This alignment was described in the Desert Sunlight EIS (BLM 2011a) as Alternative A-1.
- Gen-tie alignment Alternative C would be parallel to the Desert Sunlight gen-tie, on separate poles, but within the same ROW. This alignment was also described in the Desert Sunlight EIS as Alternative A-1.
- Gen-tie alignment Alternative D, or the cross-valley alignment, was described in the Desert Sunlight EIS as Alternative A-2.
- Gen-tie alignment Alternative E was not reviewed in the Desert Sunlight EIS.

SUMMARY OF FIELD SURVEYS

This Biological Resources Technical Report (BRTR) summarizes the results of field surveys provided in prior reports, as well as literature review and additional field work conducted by Aspen Environmental Group (Aspen) biologists. The reports and field surveys summarized in this BRTR are listed below.

- Streambed Delineation and Vegetation Map: Aspen biologists Justin Wood, Jared Varonin, and Dustin Ray mapped streambeds and vegetation on the proposed solar generator site during September and October 2011. The methods and results, including maps and text descriptions of vegetation and habitat, are incorporated into this BRTR. Vegetation mapping and delineations of the gen-tie alignment Alternatives B, C, and D are based on the Desert Sunlight EIS and supporting documents. Vegetation mapping of gen-tie alignment Alternative E was completed by Aspen biologists in October 2011, but delineation of gen-tie alignment Alternative E has not yet been completed.

- Special-Status Plant Surveys: Spring and fall field surveys for special-status plants were conducted during 2010 and 2011 by AMEC Earth and Environmental, Inc. (AMEC) and Aspen biologists The descriptions of methods and results of botanical surveys in this BRTR are summarized from AMEC's botanical report (2011a), with additional information from Aspen's independent field work.

- Desert Tortoise Surveys: Focused surveys for desert tortoise were conducted over 100% of the larger, northeastern parcel during spring 2010 (AMEC 2011b) and the smaller, southwestern parcel in spring 2011 (AMEC 2011c), as well as within the adjacent buffer zone, in accordance with US Fish and Wildlife Service (USFWS) survey protocol (2010a).

- Mojave Fringe-toed Lizard Habitat Evaluation: Herpetologist Robert Black evaluated habitat throughout the solar generator site for Mojave fringe-toed lizard habitat suitability (Black 2011).

- Avian Point-Count Surveys: AMEC conducted avian point count surveys during winter and spring of 2011 to comply with BLM requirements (2009). Winter season point counts were conducted during January 2011, and breeding season point counts were between March 30 and April 28, 2011 (AMEC 2011d).

- Generator Tie-line Alignments: Field surveys have been completed on the alignments for Alternatives B, C, and D, as described in the Desert Sunlight EIS and supporting documents. Note that the 400-foot survey corridor described for that project covered the widths of both Alternatives B and C as addressed here. Field surveys of gen-tie alignment Alternative E were begun in 2011 (vegetation mapping and fall botanical surveys) and are ongoing.

In addition to these field surveys and reports, Aspen and AMEC biologists reviewed the California Natural Diversity Data Base (CNDDB; California Department of Fish and Game, CDFG 2011) and California Native Plant Society (CNPS) Electronic Inventory (2011) to identify special-status plants, animals, and plant communities known from the area. The CNDDB report is included here as Attachment 1. We also reviewed applicable documents pertaining to the Desert Sunlight project, including the vegetation and wildlife sections of the EIS (BLM 2011a), the BRTR (Ironwood Consulting 2010), and the Biological Opinion (USFWS 2011b). During all field surveys conducted for the Desert Harvest project, all plant and animal species observed in the field were identified and recorded in field notes. A cumulative list of all plant and animal species noted on the site is included here as Attachment 2.

VEGETATION, HABITAT, AND JURISDICTIONAL STREAMBEDS

Methods

Aspen biologists Justin Wood, Jared Varonin, and Dustin Ray mapped streambeds and vegetation on the proposed solar generator site during September and October 2011. Vegetation mapping and delineations of the gen-tie alignment Alternatives B, C, and D are based on the Desert Sunlight EIS and supporting documents. These three alignments conform to gen-tie line Alternatives A-1 and A-2, described and analyzed for the Desert Sunlight Solar Project (BLM 2011a). Aspen biologists reviewed these alignments in the field to review the prior mapping and descriptions, and to identify any substantial changes that may have taken place. Based on this field verification, the discussion of vegetation on gen-tie alignment Alternatives B and C is based on the Desert Sunlight Solar Project data. Vegetation mapping of gen-tie alignment Alternative E was completed by Aspen biologists in October 2011, but the jurisdictional delineation of gen-tie alignment Alternative E has not yet been completed.

Table 1. Vegetation, Habitat, and Jurisdictional Streambed Field Survey Staff and Field Dates.

Date	Field Staff
8 Sep 2011	Justin Wood, Dustin Ray
9 Sep 2011	Justin Wood, Dustin Ray
19 Sep 2011	Justin Wood, Jared Varonin
20 Sep 2011	Justin Wood, Jared Varonin
26 Sep 2011	Jared Varonin, Dustin Ray
27 Sep 2011	Jared Varonin, Dustin Ray
28 Sep 2011	Jared Varonin, Dustin Ray
4 Oct 2011	Justin Wood, Jared Varonin, Dustin Ray, Scott White
5 Oct 2011	Justin Wood, Jared Varonin

Prior to beginning field work, Ray mapped visible streambeds on USDA 2009 and 2010 NAIP Imagery (http://datagateway.nrcs.usda.gov/GDGHome.aspx), resolution of 1 square meter (i.e. the pixels are 1m x 1m) as Geographic Information System (GIS) shapefiles. Streambeds were delineated by field-verifying presence and widths of each channel, and then refining the mapped data. During the initial site visits (8 and 9 September 2011), Wood and Ray collected channel width and depth data at a series of "sample" streambeds within a portion of the site. Based on these field observations, Ray mapped all streambeds, and added channel widths to the data set. This method was repeated throughout the proposed solar generator site. The total jurisdictional streambed acreage was calculated as the summed area of jurisdictional channels (i.e., summed length x width of all channels) plus the acreage of adjacent riparian vegetation.

Vegetation was mapped with a minimum mapping unit of about 0.15 acres (6,500 square feet) by comparing vegetation on the proposed solar generator site to aerial imagery (above) during an initial site visit (8 and 9 September 2011) to identify dominant species and determine the extent that they could be distinguished on the image. Based on this field visit, Ray mapped vegetation as a separate GIS shapefile. The vegetation map and text descriptions (below) were field verified during follow-up field visits, while walking field transects and by visiting specific points, in conjunction with streambed delineation. All GIS information was digitized in the NAD 83 datum using the California State Plane Zone VI projection to ensure local accuracy when calculating area.

Any vegetation map is subject to imprecision for several reasons:

1. Vegetation types intergrade on the landscape so that there are no true boundaries in the vegetation itself. In these cases, a mapped boundary represents best professional judgment.
2. The published nomenclature and descriptions tend to intergrade; that is, a given stand of vegetation may not match any named type in the classification scheme used. Each polygon is labeled according to the most applicable type in the classification, but there is often some ambiguity among the types.
3. Vegetation tends to be patchy. Small patches of one type are often surrounded by another type. The size of these included patches varies, depending on the minimum mapping units and scale of available aerial imagery.
4. Photo interpretation of visually similar vegetation types may be difficult.

Results

Vegetation

Two vegetation types cover the proposed solar generator site and generator tie-line Alternatives B, C, and D (Figures 3 and 4): Creosote Bush Scrub (*Larrea tridentata* Shrubland Alliance) and Blue Palo Verde-Ironwood Woodland (*Parkinsonia florida-Olneya tesota* Woodland Alliance) (Sawyer et al. 2009). The Creosote Bush Scrub vegetation is a subset of the Sonoran Creosote Bush Scrub as described by Holland (1986), and Blue Palo-Verde-Ironwood Woodland is a subset of his description of Desert Dry Wash Woodland. There also are small areas within the proposed solar generator site where natural vegetation has been removed or disturbed for roads and other land uses. In most cases (e.g., narrow roads), these areas are too small for mapping at this scale; however, the proposed solar generator site overlaps a narrow area disturbed for date palm agriculture (on an adjacent parcel) in the southeastern corner of the site. This area is mapped as "Disturbed / Disused Agriculture" on Figures 3 and 4. There also are additional disturbed areas along the generator tie-line alignments, particularly alignment Alternative D, which crosses disused agricultural lands over part of its length.

Generator tie-line alignment Alternative E, located farther to the east, crosses two additional vegetation or habitat types: active sand dunes and Creosote Bush Scrub on partially stabilized sand fields (Figure 4).

Creosote Bush Scrub (bajada/alluvial landforms): Creosote Bush Scrub on the site is characterized by low shrub species diversity and relatively wide spacing of shrubs, usually with bare ground between. The dominant species in this vegetation is creosote bush (Larrea tridentata). Associated species include white bursage (Ambrosia dumosa), brittlebush (Encelia farinosa), and big galleta (Pleuraphis rigida). This vegetation also supports a diverse assemblage of seasonal annuals, including desert sunflower (Geraea canescens), desert dandelion (Malacothrix glabrata), several pincushion species (Chaenactis spp.) and several species of cryptantha (Cryptantha spp.). The areas mapped as Creosote Bush Scrub also include areas of desert pavement with relatively sparse cover of low-statured creosote bush and seasonal annuals such as devil's spineflower (Chorizanthe rigida), kidneyleaf buckwheat (Eriogonum reniforme), and Emory's rock daisy (Perityle emoryi). We mapped 1,026 acres of Creosote Bush Scrub on the proposed solar project site. Creosote Bush Scrub has no California Department of Fish and Game special-status designation (CDFG 2010a). Each of the generator tie-line alternatives would affect a limited additional acreage of Creosote Bush Scrub, depending on the specific locations of access roads, transmission line structures, and work sites.

Creosote Bush Scrub on the site matches the Desert Scrub wildlife habitat described by Laudenslayer and Boggs (1988). Within the project area, it provides habitat for wildlife species typical of the California deserts, including burrowing species such as kangaroo rats (*Dipodomys* spp.), pocket mice (*Perognathus* and *Chaetodipus* spp.), and desert cottontail (*Sylvilagus audubonii*); and mesopredators such as desert kit fox (*Vulpes macrotis arsipus)* and coyote (*Canis latrans*). This community also serves as habitat for numerous species of reptiles including desert iguana (*Dipsosaurus dorsalis*), sidewinder (*Crotalus cerastes*), desert horned lizard (*Phrynosoma platyrhinos*), Great Basin whiptail (*Aspidocelis tigris tigris*) and zebra-tailed lizard (*Callisaurus draconoides*). Common birds observed within this vegetation included black-throated sparrow (*Amphispiza bilineata),* Gambel's quail (*Callipepla gambelii*), common raven (*Corvus corax*), red-tailed hawk (*Buteo jamaicensis*), and turkey vulture (*Cathartes aura*).

Blue Palo Verde-Ironwood Woodland: Blue Palo Verde-Ironwood Woodland occurs throughout the project area primarily in dry washes and is characterized by the presence of desert ironwood (*Olneya tesota)* and blue palo verde (*Parkinsonia florida*). Additional tree species such as smoketree (*Psorothamnus spinosus*) and cat claw acacia (*Acacia greggii*) also occur but are uncommon. This vegetation is one of several communities included within broader vegetation types called desert wash woodland or microphyll woodland (Holland 1986; Schoenherr and Burk 2007). Vegetation in desert washes is generally taller, up to approximately 9m (30 ft) in height, and denser than in surrounding desert habitats, with the height of the wash vegetation proportional to the size of the arroyo (Laudenslayer 1988). Understory vegetation within these woodlands is composed of big galleta, cheesebush (*Hymenoclea salsola*), desert lavender (*Hyptis emoryi*) and other shrubs and subshrubs. Blue Palo Verde-Ironwood Woodlands on the site match the desert wash wildlife habitat described by Laudenslayer (1988). This habitat provides greater food, nesting, and cover resources than the surrounding Creosote Bush Scrub, and wildlife diversity is generally greater than in the surrounding desert. Examples of species that depend in part on desert microphyll woodlands include vermilion flycatcher (*Pyrocephalus rubinus*), black-tailed gnatcatcher (*Polioptila melanura*), and burro deer (*Odocoileus hemionus eremicus*) (below). In addition, many of the species occupying the surrounding Creosote Bush Scrub are found in greater numbers in microphyll woodlands. This community is ranked by CDFG (2010a) as a special-status vegetation type, with state rarity ranking of S3. We mapped 180 acres of Blue Palo Verde –Ironwood Woodland on the proposed solar project site. Each of the generator tie-line alternatives would affect a limited additional acreage of this woodland vegetation, depending on the specific locations of access roads, transmission line structures, and work sites.

Creosote Bush Scrub on Partially Stabilized Sand Fields: Creosote Bush Scrub vegetation occurs on partially stabilized sand fields in the eastern portion of gen-tie Alternative E. This area is located at the western margin of a much larger dune system associated with Pinto Wash, at the base of the Coxcomb Mountains. This vegetation matches the description of Creosote Bush Scrub, above, but the cover is much sparser and the substrate consists of partially stabilized sand fields with accumulations of sands mounded at the bases of the shrubs. This habitat type is suitable for a series of special-status plants and animals, including Mojave fringe-toed lizard, which were reported in the area in the Desert Sunlight EIS and observed there by Aspen field staff. None of this habitat would be affected by solar generator construction, and only generator tie-line Alternative E would affect it. Acreage impacted by Alternative E would be dependent on the specific locations of access roads, transmission line structures, and work sites.

Active Sand Dunes: Active sand dunes are found in the eastern portion of the project area on gen-tie Alternative E. These dunes are at the western margin of the larger Pinto Wash / Coxcomb Mountains dune system, above. This habitat type is characterized by fine aeolian (i.e., wind-blown) sands that support very little vegetation. Vegetation on the dunes is sparse, but dominated by scattered creosote bush and Russian thistle (*Salsola* sp.). None of this habitat would be affected by solar generator construction, and only generator tie-line Alternative E would affect it. Impacts acreage would be dependent on the specific locations of access roads, transmission line structures, and work sites.

State Jurisdictional Streambed Delineation

The CDFG regulates alterations to state-jurisdictional streambeds under Section 1600 et seq. of the California Fish and Game Code. Jurisdictional acreage is interpreted as the bed and banks of channels and adjacent riparian vegetation. In the Chuckwalla Valley area, the Blue Palo Verde - Ironwood Woodland (described above; see Figure 3) is the regional riparian vegetation type. Due to the abundance and close spacing of braided channels throughout the area, all mapped Blue Palo Verde-Ironwood Woodland is adjacent to one or more channels. The CDFG jurisdictional streambeds are mapped on Figure 5. Note that roads crossing the site often intercept running water from channels, so that the roads themselves become streambeds as defined by CDFG. These roads account for the a few mapped streambeds that do not follow the general topography. Construction of the project would impact 113 acres of state-jurisdictional streambeds (34.5 acres within Blue Palo Verde–Ironwood Woodland, and 78.5 acres within Creosote Bush Scrub). Construction would also impact 180 acres of the adjacent riparian vegetation (Blue Palo Verde–Desert Ironwood Woodlands). Total impacts to jurisdictional areas are calculated as the sum of mapped woodlands (180 acres) plus the acreage of jurisdictional streambeds mapped outside those woodlands (78.5 acres), or 258.5 acres total within the proposed solar generator site. Each of the generator tie-line alternatives would affect a limited additional acreage of state-jurisdictional streambeds or woodland vegetation, depending on the specific locations of access roads, transmission line structures, and work sites.

SPECIAL-STATUS SPECIES

Methods

Special-Status Plants

Field surveys for special-status plants have been conducted during spring and fall throughout the proposed DHSP site, and during fall along gen-tie Alternative E. Botanical surveys on the other gen-tie alternative alignments were conducted for the Desert Sunlight EIS, and this BRTR adopts those survey results. Follow-up spring botanical surveys of gen-tie Alternative E will be completed during spring 2012.

Surveys were conducted throughout the larger, northwestern parcel by AMEC during spring 2010; throughout both parcels by Aspen biologists Justin Wood and Dustin Ray during fall 2010; throughout the smaller southwestern parcel by Wood and Ray during spring 2011; and along the eastern generator tie-line alignment (Alternative E) by Wood, Ray, and Aspen biologist Jared Varonin during fall 2011. In addition, incidental observations of flora, including special-status species, were recorded during all field work for the vegetation, habitat, and jurisdictional wetlands, described above. The following descriptions of methods and results of botanical surveys are summarized from AMEC's botanical report (2011a), with additional information from Aspen's field work.

Table 2. Botanical Survey Aspen Field Survey Staff and Field Dates (AMEC field survey staff and dates reported in Appendix (AMEC 2011a; 2011b).

Season/project component	Date	Field Staff

Season/project component	Date	Field Staff
Spring surveys, DHSP site (larger parcel)	12 Apr 2010	AMEC staff: JB, BF, SF, MO, DS, AH, NM, SN
	13 Apr 2010	AMEC staff: JB, BF, SF, MO, DS, AH, NM, SN
	14 Apr 2010	AMEC staff: JB, BF, SF, MO, DS, AH, NM, SN
	15 Apr 2010	AMEC staff: JB, SF, MO, DS, AH, SN, MW
	16 Apr 2010	AMEC staff: JB, BF, SF, MO, DS, AH, SN, MW
	17 Apr 2010	AMEC staff: JB, BF, SF, MO, DS, AH
	7 May 2010	AMEC staff: NM, SN
Fall surveys, DHSP site (both parcels)	21 Oct 2010	Aspen staff: Justin Wood, Dustin Ray
	22 Oct 2010	Aspen staff: Justin Wood, Dustin Ray
	1 Nov 2010	Aspen staff: Justin Wood, Dustin Ray
	2 Nov 2010	Aspen staff: Justin Wood, Dustin Ray
Spring surveys, DHSP site (smaller parcel)	15 Apr 2011	Aspen staff: Justin Wood, Dustin Ray
	16 Apr 2011	Aspen staff: Justin Wood, Dustin Ray
Fall surveys, gen-tie Alternative E	5 Oct 2011	Justin Wood, Jared Varonin
	13 Oct 2011	Aspen staff: Justin Wood, Dustin Ray
	14 Oct 2011	Aspen staff: Justin Wood, Dustin Ray

The spring 2010 botanical surveys were conducted in a year of higher than average rainfall at the site. Average annual precipitation recorded at the Eagle Mountain weather station is 3.68 inches (9.35 cm), while the total rainfall for the 2009-2010 rainfall year (July 1 through June 30) was 5.37 in (13.6 cm). Thus, the results of the spring 2010 surveys should represent a large proportion of floristic diversity on the site. However, BLM and CDFG also recommend late-season botanical surveys on desert sites, particularly in the eastern California deserts. The distribution and abundance of many fall-flowering species in the California desert is incompletely documented in literature due to a historic emphasis on spring, rather than fall, field work. Yet a significant proportion of the flora is made up of annual species that germinate in response to summer rains, or perennial herbs that may flower at any time of year, depending on rainfall (Shreve and Wiggins 1964; Phillips and Comus 2000). Therefore, additional late-season field surveys were conducted to find and identify as many species as possible, to maximize the likelihood that species not known from the area, or not included on a list of "target species" would be documented if they occur on the site. This approach to field work conforms to CDFG (2009) and BLM (2009) guidelines recommending "floristic" botanical surveys and provides the most thorough practicable botanical inventory of the Right of Way Application.

Prior to field surveys, AMEC and Aspen biologists reviewed available literature to identify special-status biological resources known from the vicinity of the project site. The literature and databases listed below were reviewed. For data sources that are regularly updated, such as the CNDDB and CNPS records, AMEC and Aspen biologists reviewed the available data several times during the course of the project. Only the most recent citations are included below.

- CNDDB (CDFG 2011a) for the following 7½-minute USGS topographic quads: Victory Pass, East of Victory Pass, Desert Center, Corn Spring, Coxcomb Mountains, Pinto Wells, Placer Canyon, Buzzard Spring, Hayfield Spring, West of Palen Pass, Palen Lake, and Sidewinder Well;
- CNPS Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2011), for the same topographic quads;
- NECO Plan (BLM and CDFG 2002);
- List of California BLM Sensitive Plants (BLM 2010a);

- Recent environmental documents for nearby projects including the adjacent Desert Sunlight Solar Farm Project (BLM 2011b), the Palen Solar Power Project (BLM 2011c), and the Genesis Solar Energy Project (BLM 2011d).

Based upon review of the literature and database above, and AMEC's consultation with Andrew C. Sanders (University of California Riverside Herbarium), a list of special-status plant species with potential to occur in the vicinity of the proposed project was compiled. Plant taxa were considered to be special-status species if they were classified as one or more of the following:

- Listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA);
- Listed as threatened or endangered, or candidates for listing under the California Endangered Species Act (CESA);
- Designated by BLM as Sensitive Plants: "all plant species that are currently on List 1B of the CNPS Inventory of Rare and Endangered Plants of California, are BLM sensitive species, along with others that have been designated by the California State Director" (BLM 2009; note that the CNPS Lists are now known as California Rare Plant Ranks, or CRPR);
- Listed as rare under the California Native Plant Protection Act;
- Meet the definition of rare or endangered under CEQA §15380(b) and (d).
- Considered special-status species in local or regional plans, policies, or regulations, such as the NECO Plan/EIS.

Table 3 presents the special-status plant species known from the region and summarizes their natural history, agency status, and probability of occurrence on the project site. See also Figure 3 in AMEC (2011a), which maps documented occurrences of special-status plant species that are known from the vicinity. No BLM Sensitive Species or CRPR 1B species are known from the project vicinity.

Table 3. Special-Status Plants of the Chuckwalla Valley Area.

Special-Status Plant Species	Habitat and Distribution	Flower season	Conservation Status	Occurrence Probability
Abronia villosa var. *aurita* Chaparral sand verbena	Annual or perennial herb; sand, about 250-5300 ft. elev.; San Jacinto Mtns, Inland Empire, adj. Colorado Des, Orange & San Diego cos; mostly alluvial fans and benches in western Riverside Co; dunes in deserts; not rare in the deserts	Feb. - July	Fed: none BLM: Sensitive Calif: S2 CRPR: 1B.1	High potential on gen-tie Alt E; low potential, washes or roadsides; otherwise not expected
Ammoselinium giganteum Desert sand-parsley	Annual; only known Calif. location at Hayfields Dry Lake, about 1300 ft. elev.; heavy soils, beneath shrubs; also to AZ and Mainl. Northern Mexico	March - April	Fed: none BLM: none Calif: SH CRPR: 2.3	Minimal; no suitable dry lakebed habitat
Androstephium breviflorum Pink funnel-lily, small-flowered androstephium	Bulb; Mojave Des shrublands; stabilized dunes or sandfields, about 700-5300 ft. elev.; scattered in Calif., N Ariz., S Nevada, to W Colorado	March-April	Fed: none BLM: none Calif: S2/S3 CRPR: 2.3	Minimal; no suitable habitat

Special-Status Plant Species	Habitat and Distribution	Flower season	Conservation Status	Occurrence Probability
Astragalus insularis var. *harwoodii* Harwood's milk vetch	Annual; sand, mainly dunes, also washes and slopes; below about 1200 ft. elev.; SE Calif. to Ariz., Baja and Sonora	Jan. - May	Fed: none BLM: NECO Calif: S2.2? CRPR: 2.2	High potential on gen-tie Alt E; low potential, washes or roadsides; otherwise not expected
Astragalus lentiginosus var. *coachellae* Coachella Valley milk-vetch	Annual or perennial herb; open sand, gen. dunes but also wash margins; below about 2200 ft. elev.; endemic to Coachella Valley; formerly reported from Chuckwalla Valley, those populations now recognized as *A. l.* var. *variabilis* (speckled milk-vetch)	Feb. - May	Fed: **END** BLM: Sensitive, NECO Calif: S2.1 CRPR: 1B.2	Minimal; outside geographic range
Ayenia compacta Ayenia	Perennial herb; desert shrubland, gen. rocky sites, washes and mountain slopes below about 3600 ft. elev.; W low desert margins, Chuckwalla Valley, and E Mojave; also Baja Calif. and Sonora (Mexico)	March - April	Fed: none BLM: none Calif: S3? CRPR: 2.3	Low-moderate. Washes are marginally suitable; not seen during field surveys.
Cassia – see *Senna*				
Castela emoryi Crucifixion thorn	Shrub; widespread but rare, Calif. deserts to Ariz., Baja and Sonora; fine sand or silt, washes, plains, non-saline bottomlands, about 350-2100 ft. elev.	June-July	Fed: none BLM: NECO Calif: S2/S3 CRPR: 2.3	Occurs; see text
Chamaesyce abramsiana (*Euphorbia abramsiana*) Abrams' spurge	Annual; sandy flats; about sea level to 3,000 ft. elev.; East Mojave desert, JTNP, and low desert, to Arizona and Mexico		Fed: none BLM: none Calif: S1.2 CRPR: 2.2	Potential on gen-tie Alt E; low potential, washes or roadsides; otherwise not expected
Colubrina californica Las Animas colubrina	Shrub; scattered mtn ranges of the low desert, incl. JTNP, Eagle Mtns, Chuckwalla Mtns, etc.; about 1100-3900 ft. elev.; rare in Calif., more common in Ariz. and Mexico	April - May	Fed: none BLM: NECO Calif: S2/S3.3 CRPR: 2.3	Low; field survey results
Coryphantha alversonii (C. vivipara var. *alversonii*; *Escobaria vivipara* var. *alversonii*) Alverson's foxtail cactus	Cactus; desert scrub, S Mojave and Sonoran Deserts, about 250-5000 ft. elev.; Riverside, San Bernardino, and Imperial cos., to Arizona	May - June	Fed: none BLM: NECO Calif: S3.2 CRPR: 4.3	Low; field survey results; bajada site may be unsuitable habitat
Cynanchum utahense (*Funastrum utahense*) Utah vine milkweed	Climbing perennial herb; sandy or gravelly soils, E and S Mojave Des through JTNP and Anza-Borrego regions, to S Nevada, NW Ariz., and SW Utah; about 500 - 4700 ft. elev.	April-June	Fed: none BLM: none Calif: S3.2 CRPR: List 4.2	Occurs - reported spring 2010 (one indiv.) not relocated in 2011
Ditaxis claryana (*D. adenophora*) Glandular ditaxis	Perennial herb. Conflicting info. in literature. Sandy soils below about 350 ft. elev.; or rocky uplands & sandy washes to 3000 ft.; widely scattered, Sonoran Desert, Calif. to Ariz. and mainland Mexico	conflicting lit. reports	Fed: none BLM: NECO Calif: S1/S2 CRPR: 2.2	Low - moderate; habitat may be suitable, but not seen during field surveys

Special-Status Plant Species	Habitat and Distribution	Flower season	Conservation Status	Occurrence Probability
Ditaxis californica (*D. serrata* var. *californica*) California ditaxis	Perennial herb; washes and canyons, low desert and adj. mtns.; La Quinta E to Desert Center, also Anza Borrego; about 100-3250 ft. elev.	March - Dec	Fed: none BLM: NECO Calif: S2 CRPR: List 3.2	Low - moderate; habitat is suitable, but not seen during field surveys
Eriastrum harwoodii Harwood's wollystar	Annual; partially stabilized desert dunes (San Bernardino, Riverside, and San Diego cos.); about 900 ft. to about 1700 ft. elev.	Mar-June	Fed: USFWS none BLM: Sensitive Calif: S2 CRPR: 1B.2	High potential on gen-tie Alt E; low potential, washes or roadsides; otherwise not expected
Escobaria – see *Coryphantha*				
Euphorbia – see *Chamaesyce*				
Grusonia parishii (*Opuntia parishii*) Parish's club-cholla	Stem-succulent; rocky desert shrublands, East Mojave Desert, JTNP, foothills above Coachella and Chuckwalla valleys; about 1000 – 5000 ft. elev.	May - July	Fed: none BLM: none Calif: S2 CRPR: 2.2	Low; field survey results; bajada site may be unsuitable habitat
Koeberlinia spinosa var. *tenuispina* Slender-spined allthorn	Deciduous shrub; desert shrublands and washes, below about 1700 ft. elev.; central Sonoran Desert, Imperial and Riverside cos; reported on-site in CNDDB, apparently based on misidentified *Castela emoryi*	May – July	Fed: none BLM: NECO Calif: S2.2 CRPR: 2.2	Low potential, not seen during field surveys ; see text
Matelea parvifolia Spearleaf	Low twining vine; rocky sites in desert shrublands, central and eastern deserts and Anza-Borrego State Park; S Nev., Texas, and Baja; about 1400-3600 ft. elev.	March - May	Fed: none BLM: NECO Calif: S2.2 CRPR: 2.3	Low potential, not seen during field surveys
Opuntia – also see *Grusonia*				
Opuntia wigginsi Wiggins cholla	Cactus; doubtful taxon; probably a hybrid (*O. ramisissima* x *echinocarpa*), desert shrubland about 100-3000 ft. elev., scattered Colorado Des. sites, east to Arizona	March	Fed: none BLM: NECO Calif: S1? CRPR: 3.3	Low potential, not seen during field surveys
Proboscidea althaefolia Desert unicorn-plant	Perennial herb; generally sandy soils, desert shrubland, about 500-3300 ft. elev.; Sonoran Desert to Arizona and Mexico	May - Aug	Fed: none BLM: NECO Calif: S3.3 CRPR: 4.3	Occurs
Salvia greatae Orocopia sage	Shrub; desert shrubland, washes and alluvial fans, about 100-2800 ft. elev.; Riverside & Imperial cos, endemic to Orocopia Mtns and Chocolate Mtns (doubtful report near Cadiz, San Bernardino Co)	March - April	Fed: none BLM: Sensitive, NECO Calif: S2 CRPR: 1B.3	Low - moderate; habitat may be suitable, but not seen during field surveys
Selaginella eremophila Desert spike-moss	Perennial herb; mountainous or hillside rock outcrops and crevices, about 600 - 3000 ft. elev.; lower desert-facing slopes of San Jacinto Mtns and adj. desert, to Texas and Baja	n/a	Fed: none BLM: none Calif: S 2.2? CRPR: 2.2	Minimal (no suitable habitat)

Special-Status Plant Species	**Habitat and Distribution**	**Flower season**	**Conservation Status**	**Occurrence Probability**
Senna covesii (*Cassia covesii*) Coves's cassia	Low, mostly herbaceous perennial; desert washes below about 2000 ft. elev.; Colorado Des to Nevada, Arizona and Baja Calif. [ranked S1 in CDFG 2011, corrected as S2 by pers. communic. with R. Bittman, CDFG, 21 Sep 2011]	April - June	Fed: none BLM: NECO Calif: S2 CRPR: 2.2	Low - moderate; habitat may be suitable, but not seen during field surveys
Stylocline sonorensis Mesquite neststraw	Annual; known from only one record, near Hayfields Dry Lake, now presumed extirpated; occurs in SE Arizona and mainl. Mexico	April	Fed: none BLM: NECO Calif: SX CRPR: 1A	Minimal due to apparent extirpation
Teucrium cubense ssp. depressum Dwarf germander	Annual or perennial herb; sandy alluvium, washes, etc., below about 1300 ft. elev., scattered Sonoran Desert locations, to Texas and Baja Calif.	March - May	Fed: none BLM: none Calif: S2 CRPR: 2.2	Low - moderate; habitat may be suitable, but not seen during field surveys
Wislizenia refracta ssp. *palmeri* Jackass-clover	Perennial herb or subshrub; sand flats, washes, roadsides, saltbush scrub; scattered Calif. desert locations eastward to New Mexico, sea level to about 1000 ft. elev.	April - Nov.	Fed: none BLM: NECO Calif: S 2? CRPR: 2.2	High potential on gen-tie Alt E; low potential, washes or roadsides; otherwise not expected

General references (botany): Baldwin et al. 2002; Calif. Dept. of Fish & Game 2011, Calif. Native Plant Society 2011; Consortium of California Herbaria 2011; Felger 2000; Munz 1974; Shreve and Wiggins 1964; Turner et al. 1995; USFWS 2010b.

Conservation Status

Federal designations: (federal ESA, USFWS).

END: Federally listed, endangered.
THR: Federally listed, threatened.
Candidate: Sufficient data are available to support federal listing, but not yet listed.
Proposed: Formally proposed for federal status shown.

Bureau of Land Management Designations:

Sensitive: Species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA. BLM Sensitive species also include all federal Candidate species and federal Delisted species which were so designated within the last 5 years, and CRPR 1B plant species that occur on BLM lands.
NECO: Special-status species addressed in the NECO Plan/EIS due to management concerns within the NECO Planning Area.

State designations: (CESA, CDFG)

END: State listed, endangered.
THR: State listed, threatened.
RARE: State listed as rare (applied only to certain plants).
SSC: California species of special concern. Considered vulnerable to extinction due to declining numbers, limited geographic ranges, or ongoing threats.
FP: Fully protected. May not be taken or possessed without permit from CDFG.

CDFG Natural Diversity Data Base Designations: Applied to special-status plants and sensitive plant communities; where correct category is uncertain, CDFG uses two categories or question marks.

S1: Fewer than 6 occurrences or fewer than 1000 individuals or less than 2000 acres.
S1.1: Very threatened
S1.2: Threatened
S1.3: No current threats known
S2: 6-20 occurrences or 1000-3000 individuals or 2000-10,000 acres (decimal suffixes same as above).
S3: 21-100 occurrences or 3000-10,000 individuals or 10,000-50,000 acres (decimal suffixes same as above).

S4: Apparently secure in California; this rank is clearly lower than S3 but factors exist to cause some concern, i.e., there is some threat or somewhat narrow habitat. No threat rank.
S5: Demonstrably secure or ineradicable in California. No threat rank.
SH: All California occurrences historical (i.e., no records in > 20 years).
SX: Presumed extirpated in California.

California Native Plant Society (CNPS) Rare Plant Rank designations. Note: According to CNPS (http://www.cnps.org/cnps/rareplants/ranking.php), plants ranked as CRPR 1A, 1B, and 2 meet definitions as threatened or endangered and are eligible for state listing. That interpretation of the state Endangered Species Act is not in general use.

1A: Plants presumed extinct in California.
1B: Plants rare and endangered in California and throughout their range.
2: Plants rare, threatened or endangered in California but more common elsewhere in their range.
3: Plants about which we need more information; a review list.
4: Plants of limited distribution; a watch list.

California Rare Plant Rank Threat designations:

.1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 Fairly endangered in California (20-80% occurrences threatened)
.3 Not very endangered in California (<20% of occurrences threatened or no current threats known)

Definitions of occurrence probability: Estimated occurrence probabilities based literature sources cited earlier and field surveys and habitat analyses reported here.

Occurs: Observed on the site by qualified biologists.
Expected: Not observed or recorded on the site, but very likely present during at least a portion of the year.
High: Habitat is a type often utilized by the species and the site is within the known range of the species.
Moderate: Site is within the known range of the species and habitat on the site is a type occasionally used.
Low: Site is within the species' known range but habitat is rarely used, or the species was not found during focused surveys covering less than 100% of potential habitat or completed in marginal seasons.
Minimal: No suitable habitat on the site; or well outside the species' known elevational or geographic ranges; or a focused study covering 100% of all suitable habitat, completed during the appropriate season and during a year of appropriate rainfall, did not detect the species.
Unknown: No focused surveys have been performed in the region, and the species' distribution and habitat are poorly known.

AMEC biologists visited reference populations of two special-status species, Coachella Valley milk-vetch and Harwood's milk-vetch, to confirm that they could be reliably located and identified during the 2010 field surveys. Coachella Valley milk-vetch is the only listed threatened or endangered plant reported from the vicinity and Harwood's milk-vetch is a relatively widespread CRPR 2.2 species with potential to occur in the project area. In 2011, Aspen biologists visited reference populations of three additional special-status plants, California ditaxis, Utah vine milkweed, and desert all-thorn, to compare known examples with similar plants on the ROW.

During all botanical surveys, all plant species observed were identified in the field or collected for later identification. Plants were identified using keys, descriptions, and illustrations in regional references such as Shreve and Wiggins (1964), Munz (1974), and Baldwin et al. (eds., 2002). All species noted in each survey area are listed in the attached species list. In conformance with CDFG guidelines (2009), surveys were (a) conducted during flowering seasons for the special-status plants known from the area, (b) floristic in nature, (c) consistent with conservation ethics, (d) systematically covered all habitat types on the Right of Way, and (e) well documented, by this report and by voucher specimens to be deposited at Rancho Santa Ana Botanic Garden. Locations of special-status plants will be reported to the NDDB.

Spring 2010 surveys for special-status plants were conducted concurrently with desert tortoise surveys, along belt transects spaced at 10 meter intervals over 100 percent of the larger ROW parcel. AMEC botanist Shari Norton accompanied tortoise biologists, and documented all plant species observed throughout the survey period (AMEC 2011a). This field method combines the BLM's (2009) two recommended field protocols (100 percent coverage and "intuitive controlled"). Tortoise biologists were supplied with a project-specific field guide containing illustrations of special-status plants potentially occurring on the site. The tortoise crew, accompanied by the botanist, covered the entire survey area and, during the surveys, directed the botanist to plants they did not recognize, or that resembled special-status plants of the area. Where special-status species were observed, the locations were recorded with hand-held global positioning system (GPS) devices.

Fall 2010 botanical surveys covered the entire DHSP site, but did not include the gen-tie alignments. The field methods followed the "intuitive controlled survey" methods, described by BLM (2009). Wood and Ray carried out a complete survey of washes and any low-lying areas throughout the two parcels where runoff from summer rains would have been most concentrated, and a less intense survey of upland bajada and desert pavement surfaces. The primary target species for these field surveys were glandular ditaxis and California ditaxis, based on recommendations in AMEC (2011a). On average, August is the wettest month, though Western Regional Climate Center (WRCC) reported no measureable rainfall at the Eagle Mountain station in August 2010. Results of the fall 2010 survey were augmented with additional incidental botanical observations made during fall 2011, during the vegetation mapping and streambed delineation field work, described above. Rainfall during late summer 2011 was much heavier, and numerous occurrences of one late-flowering species, desert unicorn-plant, were recorded.

Spring 2011 botanical surveys covered the smaller, southwestern DHSP site, following the 100 percent coverage survey method described by BLM (2009). Wood and Ray walked linear transects, spaced 10 meters apart, over the entire parcel. This survey method effectively covered 100 percent of the parcel. The WRCC has not updated precipitation records at the Eagle Mountain Station for 2011, but spring of 2011 was a drier rainfall year than 2010, and diversity of the spring flora was lower than recorded in spring 2010.

Fall 2011 botanical surveys of gen-tie alignment Alternative E by Aspen biologists Justin Wood, Dustin Ray, and Jared Varonin. They covered the entire alignment, by walking four intuitive-controlled transects (BLM 2009) along each segment of the alignment. On each segment, two biologists walked from a starting point, to an ending point, and then back. The WRCC has not updated precipitation records at the Eagle Mountain Station for 2011, but heavy rains occurred in late summer of 2011, and diversity of the summer-fall flora was greater than recorded in fall 2010.

Botanical surveys of gen-tie alignment Alternatives B, C, and D were completed during spring 2010 by Ironwood Consulting staff, as described in the Desert Sunlight EIS (BLM 2011a) and supporting documents.

Special-Status Wildlife

Based upon the literature and database review described above, a list of special-status wildlife species with potential to occur in the vicinity of the proposed project was compiled. In addition to the literature sources listed above for botanical surveys, the literature review included the CNDDB's Special Animals List (CDFG 2011b). Wildlife species were considered to be special-status species if they were classified as one or more of the following:

- Listed, proposed for listing, or candidates for listing as threatened or endangered under the federal ESA;
- Listed as threatened or endangered. or candidates for listing under CESA;
- Designated by BLM as Sensitive Animals (BLM 2010b);

- Meet the definition of rare or endangered under CEQA §15380(b) and (d).
- Considered special-status species in local or regional plans, policies, or regulations, such as the NECO Plan/EIS.

All special-status wildlife species identified by this literature review, and others known from the general region, are included in Table 4, which summarizes the natural history, agency status, and occurrence probability on the site for each special status wildlife species known from the region.

Table 4. Special-Status Wildlife of the Chuckwalla Valley Area.

Special-Status Wildlife Species	Habitat and Distribution	Activity season	Conservation Status	Occurrence Probability
AMPHIBIANS				
Scaphiopus couchi Couch's spadefoot	Breeds in seasonal rainpools following summer rains; burrows in sand remainder of year; eastern Colorado Desert, generally close to Colorado River	Summer	Fed: none BLM: Sensitive, NECO Calif: SSC	Minimal; no potential rainpool habitat; outside known geographic range
REPTILES				
Gopherus agassizii *(Xerobates agassizi)* Desert tortoise	Desert shrublands where soil suitable for burrows; Mojave and Sonoran des. (E Calif., S Nevada, W Ariz., and Sonora, Mexico)	Spring - summer	Fed: **THR** BLM: Sensitive, NECO Calif: **THR** S2	High; no recent sign, but near known occurrences (see text)
Heloderma suspectum cinctum Banded Gila monster	Rocky outcrops in desert shrubland; scarce in scattered eastern mountain ranges of Calif. deserts; to S Nevada, W Ariz., and Mainland Mexico	warm seasons	Fed: none BLM: Sensitive Calif: SSC S1	Minimal; outside known range and bajada habitat is poorly suitable
Sauromalus obesus (*S. ater*) Common chuckwalla	Rocky outcrops in desert shrubland; throughout deserts of Calif., S Nevada, W Ariz., and Baja Calif.	warm seasons	Fed: none BLM: NECO Calif: S4	Low; no suitable bedrock outcrops
Uma scoparia Mojave fringe toed lizard	Sand, especially dunes, sandy hummocks, washes, stabilized sand flats; below sea level to about 3000 ft. elev.; Death Valley, SW to Antelope Valley and SE to W Arizona	Warm season	Fed: none BLM: Sensitive, NECO Calif: SSC S3S4	Occurs on gen-tie Alt E; low potential remainder of project components; poorly suitable habitat (see text)
Charina trivirgata (*Lichanura trivirgata*) Rosy boa	Rocky chaparral and desert shrubland; gen below about 4500 ft. elev.; S Calif. through Baja Calif., SW Arizona, and western Sonora	Spring - summer	Fed: none BLM: NECO Calif: S3S4	Low-moderate (marginally suitable habitat throughout)
BIRDS				
Circus cyaneus Northern harrier	Breeds colonially in grasslands and wetlands; forages over open terrain; N America and Eurasia	Winter; rare in summer	Fed: none BLM: none Calif: SSC S3 (nesting)	Nesting: Minimal (no habitat) Foraging: Expected rarely, mainly winter

Special-Status Wildlife Species	Habitat and Distribution	Activity season	Conservation Status	Occurrence Probability
Aquila chrysaetos Golden eagle	Nests in remote trees and cliffs; forages over shrublands and grasslands; breeds throughout W N America, winters to E coast	Year-around	Fed: Eagle Protection act (see text) BLM: NECO Calif: SSC S3 fully protected	Nesting: Minimal on-site, occurs in surrounding mtns Foraging: High (year-around)
Pandion haliaetus Osprey	Nests in northern N America and Mexican coastlines near large water bodies, preys primarily on fish; winters in central Calif to S America;	Spring and fall migr. seasons	Fed: none BLM: none Calif: S3, watch list (nesting)	Nesting: Minimal (outside range; no suitable sites) Migration: Occurs, occasional flyover
Buteo swainsonii Swainson's hawk	Breeds in trees in open habitats (e.g., grassland), Central Valley and W Mojave Des (Calif.) and east to cent. US, S. Canada, N. Mexico; winters in S America.	Spring and fall migr. seasons	Fed: none BLM: none Calif: S2, **THR**	Nesting: Minimal (outside range; no suitable sites) Migration: Present occasional flyover
Buteo regalis Ferruginous hawk	Forages over grassland and shrubland; winters in W and SW N Amer. (breeds in Great Basin and N plains)	Winter	Fed: none BLM: NECO Calif: SSC S3S4 (wintering)	Nesting: Minimal (outside range) Winter: Expected (rarely)
Accipiter striatus Sharp-shinned hawk	Nests and hunts in forest & woodland mainly to N (may breed in S Calif. Mtn woodlands); also forages in open areas; regularly winters in S Calif.	Winter	Fed: none BLM: none Calif: SSC S3 (nesting)	Nesting: Minimal (no habitat, outsid range) Winter/Migration: Occurs (Jan 2011
Accipiter cooperii Cooper's hawk	Nests and hunts in forest &woodland, also forages in open areas; most of US, Central and S America	Year-around	Fed: none BLM: none Calif: SSC S3 (nesting)	Nesting: Minimal (no habitat) Winter/Migration: Expected
Falco columbaris Merlin	Uncommon in winter in S Calif. desert and valleys (breeds in northern N America and Eurasia)	Winter	Fed: none BLM: none Calif: SSC S3 (wintering)	Nesting: Minimal (outside range) Winter: Expected
Falco mexicanus Prairie falcon	Nests on high cliffs, forages primarily over open lands; occurs throughout arid western US and Mexico	Year-around	Fed: none BLM: NECO Calif: SSC S3 (nesting)	Nesting: Minimal on-site, occurs in surrounding mtns Foraging: High (year-around)
Athene cunicularia (*Speotyto cunicularia*) Burrowing owl	Nests mainly in rodent burrows, usually in open grassland or shrubland; forages in open habitat; increasingly uncommon in S Calif.; occurs through W US and Mexico	Year-around	Fed: none BLM: Sensitive, NECO Calif: SSC S2 (burrow sites)	Occurs (Sep 2011 see text
Asio flammeus Short-eared owl	Breeds in marshes and densely vegetated wetlands, forages over open wetlands, ag fields, and grasslands; temperate N & S America, Eurasia	Year-around	Fed: none BLM: none Calif: S3, SSC (nesting)	Breeding: Minima (no habitat) Winter: Minimal (reported near Lak Tamarisk)

Special-Status Wildlife Species	Habitat and Distribution	Activity season	Conservation Status	Occurrence Probability
Asio otus Long-eared owl	Breed in riparian woodlands; forage (nocturnally) over open land; sea level to about 6000 ft. elev.; through N America and Eurasia	Year-around	Fed: none BLM: none Calif: S3 SSC (nesting)	Breeding: Minimal (no habitat) Winter: Minimal (but occurs rarely at Lake Tamarisk
Chaetura vauxi Vaux's swift	Breeds central Calif. and northward, in coastal and montane forests; winters in Central and S America	Spring and fall migr. seasons	Fed: none BLM: none Calif: SSC S3 (nesting)	Nesting: Minimal (outside range) Migration: Occurs, occasional flyover
Melanerpes uropygialis Gila woodpecker	Saguaro woodlands, sometimes other woodlands; cavity nester mainly in cactus; SE Calif., S Ariz, W Mexico (incl. Baja)	Year - around	Fed: none BLM: Sensitive Calif: **END** S1S2	Nesting: Minimal (ironwood poor for nest constr.) Winter: Occurs (Dec 2010); see text
Lanius ludovicianus Loggerhead shrike	Woodlands, shrublands, open areas with scattered perch sites; not dense forest; widespread in N America; valley floors to about 7000 ft. elev.	Year-around	Fed: none BLM: none Calif: SSC S4 (nesting)	Occurs (suitable habitat throughout)
Aphelocoma californica cana Scrub jay (Eagle Mtn population)	Locally endemic year-around resident in pinyon woodlands in the Eagle Mountains; long-disjunct from other populations	Year-around	Fed: none BLM: none Calif: CDFG watch list, S1S2	Occurs? (observed as transient, Oct 2011; see text)
Toxostoma bendirei Bendire's thrasher	Joshua tree woodland, desert scrub; high cactus cover; mainly E Mojave Des in Calif. (scarce in W Mojave); American SW and mainl. Mexico; winters in S Arizona, New Mexico, and mainl. Mexico	Spring-summer	Fed: none BLM: Sensitive, NECO Calif: SSC S3	Low-Moderate; marginal habitat throughout
Toxostoma crissale Crissal thrasher	Nests in dense, low, brushy thickets of mesquite or other desert riparian shrubs; Sonoran Des, E Mojave Des, to Texas, W mainland Mexico	Year - around	Fed: none BLM: NECO Calif: SSC S3	Low-moderate; habitat marginally suitable
Toxostoma lecontei LeConte's thrasher	Calif. deserts, SW Central Val. & Owens Val., east to Utah, Arizona; open shrubland, often sandy or alkaline flats	Year - around	Fed: none BLM: NECO Calif: S3 (SSC in San Joaquin Val)	High; suitable habitat throughout
Pyrocephalus rubinus Vermillion flycatcher	Desert riparian woodlands and shrublands; SE Calif., east through S Texas, and S through Mexico; winters in Mexico	spring - summer	Fed: none Calif: SSC S2S3 (nesting)	Nesting: Moderate (suitable nesting habitat in ironwood stands)
Vermivora luciae Lucy's warbler	Cavity-nesting species; breeds in desert riparian woodlands through much of Arizona; winters on Pacific Coast of mainl. Mexico	spring - summer	Fed: none BLM: Sensitive Calif: SSC S2S3 (nesting)	Nesting: Moderate (margin of known range; see text) Migration: Occurs singing males observed April 2011
MAMMALS				

Special-Status Wildlife Species	**Habitat and Distribution**	**Activity season**	**Conservation Status**	**Occurrence Probability**
Antrozous pallidus Pallid bat	Rock outcrops of shrublands, mostly below about 6000 ft. elev.; Calif, SW N Amer through interior Oregon and Washington; hibernates in winter	Warm season	Fed: none BLM: Sensitive Calif: SSC S3	Low potential for roosting on site; high potential for foraging in area
Corynorhinus (*Plecotus*) *townsendii* Townsend's big-eared bat (incl. "pale," "western," and other subspecies)	Many habitats throughout Calif and W N Amer, scattered populations in E; day roosts in caves, tunnels, mines; feed primarily on moths	Year-around	Fed: none BLM: Sensitive Calif: SSC, S2S3	Low potential for roosting on site; high potential for foraging in area
Euderma maculatum Spotted bat	Desert (cool seasons) to pine forest (summer), much of SW N Amer. but very rare; roosts in deep crevices in cliffs, feeds on moths captured over open water	Not known	Fed: none BLM: Sensitive Calif: SSC S2S3	Low potential for roosting or foragin on site
Eumops perotis californicus California mastiff bat	Lowlands (with rare exceptions); cent. and S Calif., S Ariz., NM, SW Tex., N Mexico; roost in deep rock crevices, forage over wide area	Year-around	Fed: none BLM: Sensitive, NECO Calif: SSC S3?	Low potential for roosting on site; high potential for foraging in area
Lasiurus xanthinus (*Nycteris ega xanthina*) Western (Southern) yellow bat	Mexico and Cent. Amer., to S AZ; Riv., Imperial and San Diego Cos.; riparian and wash habitats; roosts in trees; evidently migrates from Calif. during winter	Spring-summer?	Fed: none BLM: none Calif: S3	Low potential for roosting on site; high potential for foraging in area
Macrotus californicus (*M. waterhousii*) California leaf-nosed bat	Arid lowlands, S Calif., S and W Ariz., Baja Calif. and Sonora, Mexico; roost in mine-shafts, forage over open shrublands	Year-around	Fed: none BLM: Sensitive, NECO Calif: SSC S2S3	Low potential for roosting on site; high potential for foraging in area
Nyctinomops macrotis (*Tadarida molossa*) Big free-tailed bat	Roosts in crevices of rocky cliffs, scattered localities in W N. Amer. through Cent. Amer.; ranges widely from roost sites; often forages over water	Year-around (?)	Fed: none BLM: none Calif: SSC S2	Low potential for roosting on site; high potential for foraging in area
Nyctinomops femorosaccus (*Tadarida femorosaccus*) Pocketed free-tailed bat	Deserts and arid lowlands, SW US, Baja Calif., mainland Mexico; Roost mainly in crevices of high cliffs; forage over water and open shrubland	Year-around	Fed: none BLM: NECO Calif: SSC S2S3	Low potential for roosting on site; high potential for foraging in area
Xerospermophilus tereticaudus chlorus (*Spermophilus t. c.*) Palm Springs round- tailed ground squirrel (or Coachella Valley round-tailed ground squirrrel)	Widespread in California deserts, Coachella Valley to Death Valley; formerly considered endemic to mesquite and sandy habitats in Coachella Valley	Year - around	Fed: none (former candidate) BLM: Sensitive Calif: SSC S2S3	Occurs (reported site and near gen-tie Alignment B)
Neotoma albigula venusta Colorado Valley woodrat	Desert shrublands; SE Calif., SW Ariz., adj. Mexico, and southernmost Nevada; closely associated with beavertail or mesquite thickets	Year-around	Fed: none BLM: NECO Calif: S1S2	Low (habitat marginal)
Taxidea taxus American badger	Mountains, deserts, interior valleys where burrowing animals are avail as prey and soil permits digging; throughout cent and W N Amer	Year-around	Fed: none BLM: none Calif: CSC S4	Present; disused burrow on-site; expected in low numbers through area

Special-Status Wildlife Species	Habitat and Distribution	Activity season	Conservation Status	Occurrence Probability
Vulpes macrotia arsipus Desert kit fox	Widespread, open desert lands; constructs below-ground dens; requires soil suitable for burrowing; primarily nocturnal; preys on small mammals	Year-around	Federal: none BLM: none State: Calif. Code of Regs. Title 14 § 460	Present; numerous burrows on-site
Felis concolor browni Yuma mountain lion	Low desert, JTNP, to Colorado River; primarily in dense riparian habitats of river and dense desert wash scrub of canyons, where water and prey are available	Year-around	Fed: none BLM: NECO Calif: SSC	Expected in low numbers throughout area
Odocoileus hemionus eremicus (*O. h. crooki*) Desert mule deer, burro deer	Colorado desert, scattered mountains and bajadas, gen. near dependable water sources	Year-around	Federal: none BLM: NECO State: none	Expected in low numbers throughout area
Ovis canadensis nelsoni Nelson's bighorn sheep	Open shrublands and conifer forest, remote mountains; scattered populations in desert mountains and surrounding ranges, incl. Transverse and Peninsular ranges	Year - around	Fed: none BLM: Sensitive, NECO Calif: S3, FP (selected populations)	Expected in low numbers, mainly to move among mountain ranges

General References: American Ornithologists Union 1998 (including supplements through 2011); Barbour and Davis 1969; Feldhammer et al. 2003; Garrett and Dunn 1981; Grinnell and Miller 1944; Hall 1981; Jennings and Hayes 1994; Rosenberg, et al. 1991; Schuford and Gardali 2008; Stebbins 2003; Wilson and Ruff 1999.
Conservation Status and Occurrence Probability defined above (Table 3).

Focused surveys for desert tortoise were conducted over 100 percent of the larger, northeastern parcel during spring 2010 (AMEC 2011b) and the smaller, southwestern parcel in spring 2011 (AMEC 2011c), as well as adjacent buffer areas, in accordance with USFWS survey protocol (2010). Belt transects, spaced 10 meters (m) apart, were systematically walked over both parcels. When observed, any potential desert tortoise sign (e.g., burrows) was documented on appropriate survey forms. Potential desert tortoise sign observed was photographed and mapped using handheld GPS equipment. Where present, desert woodrat (Neotoma lepida) middens and animal burrows of various kinds (e.g., desert kit fox, coyote, badger, ground squirrel, kangaroo rat) were carefully inspected for presence of desert tortoises and their sign. Parallel belt transects were also walked within the zone of influence around the perimeter of the sites at intervals of 200, 400 and 600 meters. General weather conditions were recorded at the start and end of each survey. Temperatures and time of day were recorded at the start and end of each transect.

Phase II (burrow surveys) for burrowing owls were conducted concurrently with desert tortoise surveys. Each burrow encountered during the desert tortoise survey was examined for sign of desert tortoise activity, as well as burrowing owl activity. These surveys provide data that is equivalent to Phase II burrow surveys (CBOC 1993).

Avian point-count surveys were conducted by AMEC biologists during winter and spring of 2011 to comply with BLM requirements (2009b). Winter season point counts were conducted during January 2011, and breeding season point counts were between March 30 and April 28, 2011.

The descriptions of regional golden eagle habitat, nest sites, and territory occupancy are based on the data provided in the Desert Sunlight Solar Farm EIS and supporting documents (BLM 2011b; Ironwood Consulting 2010).

A Mojave fringe-toed lizard habitat evaluation was conducted by Robert Black within the proposed solar facility site boundaries and development footprint on February 25, March 5, and March 12, 2011 to identify potential habitat, individuals, and/or sign that would indicate potential occupancy of the project site by this species.

Aspen biologists evaluated suitability for seasonal Couch's spadefoot breeding habitat on the project site and gen-tie line Alternative E, based on soils and topography observed during vegetation mapping and streambed delineation field work, described in Section 3.3. Desert kit fox burrows and sign were noted during desert tortoise and subsequent vegetation mapping and streambed delineation field work.

Results and Discussion

Listed Threatened or Endangered Plants

This section describes species reported from the region that are listed as threatened or endangered under the federal ESA or CESA. One listed threatened or endangered plant, Coachella Valley milk-vetch, has been reported in the Chuckwalla Valley, though that report is now discounted (see below). Other listed threatened or endangered species of the low desert region (e.g., triple-ribbed milk-vetch, Peirson's milk-vetch) occur well outside the area and are not addressed in this report. No listed threatened or endangered plant species, or species proposed for listing or candidates for listing, has been documented from the project site or gen-tie alternative alignments.

Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*): Coachella Valley milk-vetch is an annual or short-lived perennial endemic to the Coachella Valley. It is federally listed as endangered, a BLM sensitive species, and ranked as CRPR 1B. It is primarily found on loose aeolian (wind transported) or, less-often, in alluvial (water transported) sands, on dunes or flats and along disturbed margins of sandy washes. The easternmost known occurrences are near Indio, about 45 miles west of the Desert Harvest project area. All designated critical habitat for Coachella Valley milk-vetch is within the Coachella Valley, west of Indio (USFWS 2011a). Specimens resembling Coachella Valley milk-vetch have been collected from the Pinto Wash and Palen dune system, northeast of Desert Center. However, the USFWS (2009; 2011a) regards these as the related variety, speckled milk-vetch (*A. lentiginosus* var. *variabilis*), which has no special conservation status.

DHSP occurrence or effects: The only portion of the project that would affect suitable habitat for Coachella Valley milk-vetch would be gen-tie alignment Alternative E, which would cross dunes and partially stabilized aeolian sand habitat over part of its length. However, since the project area and vicinity are well outside the recognized geographic range, no project impacts to Coachella Valley milk-vetch would be expected.

BLM Sensitive Plants

The BLM (2010a) maintains a list of Sensitive Species, including species that are rare, declining, or dependent on specialized habitats. The list includes all plants ranked by CNPS and CDFG as CRPR) 1B. The BLM manages sensitive species to provide protections comparable to species that may become listed as threatened or endangered (i.e., candidate species for federal listing). None of these species has been documented from the project site or gen-tie alternative alignments. Each BLM sensitive plant species known from the project vicinity is described briefly, below.

Chaparral sand verbena (*Abronia villosa* var. *aurita*): Chaparral sand-verbena's distribution and identification are unclear in published reference works, including Spellenberg (2002), CNPS (2011) and CNDDB (CDFG 2011). It is a BLM sensitive species, and ranked as CRPR 1B. This plant was added to the CNPS Inventory based on recommendations by Andrew C. Sanders of the UC Riverside Herbarium. The primary conservation concern is for chaparral sand-verbena occurrences in western Riverside County and other locations outside the desert (see Roberts et al. 2004). These western plants appear to be distinct from the very common desert sand verbena, *Abronia villosa* var. *villosa*. Plants in the low desert often match the characteristics of the western Riverside County populations, but they are not regionally rare.

DHSP occurrence or effects: There is some possibility that gen-tie alignment alternative E, and road margins near Highway 95, may support chaparral sand verbena. Road margins are subject to routine vehicle disturbance; project activities would not add to the existing and ongoing disturbance to roadside soils.

Harwood's woolly-star (*Eriastrum harwoodii*): Harwood's woollystar is an annual species known only from partially stabilized aeolian sand habitats in the deserts of eastern Riverside and San Bernardino counties (Gowen 2008) and San Diego County (DeGroot 2008). It is a BLM sensitive species, and ranked as CRPR 1B. It flowers in early April.

DHSP occurrence or effects: The only portion of the project that would affect suitable habitat for Harwood's woolly-star would be gen-tie alignment Alternative E, which would cross dunes and partially stabilized aeolian sand habitat over part of its length. Spring botanical surveys will be conducted along gen-tie Alternative E in 2012 to determine presence or absence of this species.

Orocopia sage (*Salvia greatae*): Orocopia sage is a shrubby sage with spiny leaves and lavender flowers. It is a BLM sensitive species, and ranked as CRPR 1B. It is endemic to the Orocopia and Chocolate mountains, Riverside County, where it occurs in desert washes below about 2800 feet elevation. It also has been reported from the Mojave Desert in San Bernardino County, thought that report almost certainly refers to a misidentification of Death Valley sage (S. funerea) (A. Sanders, UC Riverside, pers. comm.).

DHSP occurrence or effects: Habitat on the project site appears to be suitable, but the site is a few miles north of its known geographic range. It has not been located on the site during field surveys, but there is a low probability that it may occur on the site.

Mesquite neststraw (*Stylocline sonorensis*): Mesquite neststraw is known from southeastern Arizona and northeastern Sonora, Mexico. It has only been documented at one California location, near Hayfields Dry Lake, where it was collected in the 1930s. It is now presumed extirpated in California. It is ranked as CRPR 1A. Its habitat is reported as "grassy hillsides, sandy drainages, with mesquite" (Morefield 2006).

DHSP occurrence or effects: The only potential habitat in the project area is along gen-tie alignment Alternative E, on valley-floor drainages. Mesquite nest-straw is not expected to occur in the project area due to its apparent extirpation in California.

Other Special-Status Plants

In addition to the statutes and policies described above, several public agencies and private entities maintain lists of plants and animals of conservation concern. The CDFG compiles these in its compendia of "Special Plants." These plants are treated here as "special status species." All plants of the region that are included in CDFG and CNPS rankings as CRPR 2, 3, or 4 are included in Table 3, but only those species reported from the site are addressed below.

Emory's crucifixion thorn (*Castela emoryi*): Emory's crucifixion thorn is endemic to the Sonoran and southern Mojave Deserts of the American southwest. It is widely scattered in southwestern Arizona; its scattered occurrences in the California deserts are the western extent of its range (Turner et al. 1995). The most well known stand is at the Crucifixion Thorn Natural Area (CTNA) in Imperial County, California. It also occurs at a few sites in northwestern Sonora, Mexico, and in northern Baja California immediately adjacent to the CTNA. Emory's crucifixion thorn is a leafless shrub or small tree of washes, non-saline dry lakes, and other sites where water accumulates. The plants are long-lived and densely thorny. The stems are light gray-green, rigid, ascending (directed upward) with stout spine-tipped twigs. Its flowers are inconspicuous and abundant. The fruits, after maturing, remain on the plant for several years. Young plants, prior to fruiting, do not have the characteristic clustered fruits of older plants. Plants occur as scattered colonies, possibly clones, of fairly small size that do not extend far across the landscape (Shreve and Wiggins 1964). Emory's crucifixion thorn is assigned to CRPR 2.3 (rare, threatened, or endangered in California, but more common elsewhere). It is not managed by BLM as a sensitive species (BLM 2010a).

DHSP occurrence or effects: Three individual crucifixion thorn plants were located along the western boundary of the larger, northeastern project parcel, and numerous additional plants were located in the smaller, southwestern parcel (Figure 3). Large stands of crucifixion thorn are described as "crucifixion thorn scrub" (Sawyer et al. 2009), but the density and extent of the plants on the Desert Harvest site do not warrant mapping as a distinct vegetation type.

Utah vine milkweed (*Cynanchum utahense, Funastrum utahense*): Utah vine milkweed is a perennial herb that dies back to the ground in summer. It ranges from the California deserts to southwestern Utah. Its habitat is desert washes and canyons (Bell 2009). Utah vine milkweed is assigned to CRPR 4.2 (limited distribution, "watch list"). It is not managed by BLM as a sensitive species (BLM 2010a).

DHSP occurrence or effects: It was recorded on the site during 2010 spring botanical surveys (AMEC 2011a; see Figure 3), but was not relocated in subsequent surveys. Aspen botanists located a single Utah vine milkweed a short distance outside the project area while visiting a reference location of slender-spined allthorn (below).

Slender-spined allthorn (*Koeberlinia spinosa* var. *tenuispina*): Slender-spined allthorn is a densely-branched shrub, to several meters tall, with dark green bark (Turner et al. 1995). Most verified California locations are within the Chocolate Mountains, a few miles south of the Desert Harvest site, but it also occurred on the Desert Sunlight project site, north of the Desert Harvest site. It resembles crucifixion thorn (above), and is distinguished by stems, which are brighter green, not as stout, and branched at right angles rather than ascending). It does not retain fruits on the stems after maturation. It is assigned to CRPR 2.2 (rare, threatened, or endangered in California but more common elsewhere). It is not managed by BLM as a sensitive species (BLM 2010a).

DHSP occurrence or effects: The CNDDB reported a slender-spined allthorn occurrence in the smaller, southwest parcel of the proposed Desert Harvest project site, but Aspen botanists located that plant and determined that it was a young crucifixion thorn, without fruits on the stems. Based on field survey results, we conclude that slender-spined allthorn is not likely to occur on the site.

Desert unicorn-plant (*Proboscidea althaefolia*): Desert unicorn-plant, also called "devil's claw," is a perennial herb that grows from a large rooststock. It is dormant in spring, but sprouts in response to summer rains. It ranges throughout much of the Sonoran Desert, eastward to Texas and parts of mainland Mexico. It is conspicuous for its woody, hook-shaped fruits (pods), that are evidently dispersed by clinging to fur or hooves of large mammals. It is ranked as CRPR 4.3 (limited distribution, "watch list"). It is not managed by BLM as a sensitive species (BLM 2010a).

DHSP occurrence or effects: Desert unicorn-plant was located at several sites on the Desert Harvest project site and along gen-tie alignment Alternative E during fall, 2011, but not fall 2010 (Figure 3).

Listed Threatened or Endangered Wildlife

This section includes species listed as threatened or endangered under CESA or ESA. One listed threatened or endangered species, the desert tortoise, occurs near the project site. Two others (Gila woodpecker and Swainson's hawk) have been observed on or near the site during migratory or wintering seasons, but are not expected to use the site for breeding. Other listed species of the region are either limited to riparian and aquatic habitats (e.g., southwestern willow flycatcher, least Bell's vireo, and desert pupfish) or occur well outside the area (e.g., Coachella Valley fringe-toed lizard).

Desert Tortoise (*Gopherus agassizii*): The desert tortoise is listed as threatened under CESA, and the Mojave population (i.e., west of the Colorado River) is listed as threatened under the federal ESA. East of the Colorado River, the desert tortoise's range extends into the Arizona deserts, and south through Sonora (Mexico). Tortoises east of the Colorado River have been considered a separate population of the same species, but recent work by Murphy et al. (2011) suggests that they should be recognized as a distinct species, Morafka's desert tortoise (*Gopherus morafkai*). All wild desert tortoises in California are part of the state and federally listed Mojave population.

The USFWS reviewed desert tortoise biology and population status in the recent Revised Recovery Plan (USFWS 2011c). The following summary is based on that review and literature cited therein. Desert tortoises spend much of their lives in burrows. They enter hibernation during autumn. In late winter or early spring, they emerge from over-wintering burrows and typically remain active or partially active through fall. Activity decreases in summer, but tortoises often emerge after summer rain storms to drink and to take advantage of seasonal food availability during the few weeks following late summer rains. They may become dormant during extended periods of summer heat and dryness. A single tortoise may have a dozen or more burrows within its home range, and different tortoises may use these burrows at different times. Even during their active seasons, they are inactive during much of the day or night, within burrows or at "palettes" (partially sheltered flattened areas, often beneath shrubs or large rocks) or other shaded sites.

Adult desert tortoises lose water at such a slow rate that they can survive for more than a year without access to free water of any kind and can apparently tolerate large imbalances in their water and energy budgets. During periods of inactivity, their metabolism and water loss are reduced. Desert tortoises eat a wide variety of herbaceous vegetation, particularly grasses and the flowers of annual plants.

Desert tortoise habitats include many landforms and vegetation types of the Mojave and Sonoran deserts, except the most precipitous slopes. Friable soils, such as sand and fine gravel, are important for burrow excavation and nesting, and the availability of suitable soils is a limiting factor to desert tortoise distribution.

The sizes of desert tortoise home ranges vary with respect to location and resource availability, and may vary among years. Male tortoises' home ranges can be as large as 200 acres, while females' long-term home ranges may be less than half that size. Core areas used within tortoises' larger home ranges depend on the number of burrows. Over its lifetime, a desert tortoise may use more than 1.5 square miles of habitat and may make periodic forays of several miles at a time.

Tortoises are long-lived and grow slowly. They require 13 to 20 years to reach sexual maturity. Their reproductive rates are low, though their reproductive lifespan is long. Mating may occur both during spring and fall. The number of clutches (set of eggs laid at a single time) and number of eggs that a female desert tortoise produces is dependent on habitat quality, seasonal food and water availability, and the animal's physiological condition. Egg-laying occurs primarily between April and July; the female typically lays 2-14 (average 5-6) eggs, which are buried near the mouth of a burrow or beneath a shrub. The eggs typically hatch 90 to 120 days later, between August and October. Clutch success rates are unknown and nest predation rates are variable, but predation appears to be an important cause of clutch failure.

Desert tortoise population trends have been difficult to discern. The USFWS (2011c) reviews population monitoring efforts dating back to the 1980s, and concludes that available data provide qualitative (not quantitative) insight to range-wide trends, and show appreciable declines at the local level in some areas. A more formal and consistent range-wide monitoring study was initiated in 2001, but no range-wide trend has been identified over that period.

Desert tortoise populations are threatened by several factors, each of which tends to be exacerbated by the others and most of which are associated with human land uses and other human activities. Most threats identified in the 1980s as the bases for state and federal listing continue to affect tortoise populations today. Habitat degradation and loss due to land use conversion, grazing, mining, energy development, and transportation projects have all contributed to declining tortoise numbers and fragmented populations. Off-road vehicle use degrades habitat and causes direct mortality from vehicle collision or crushed burrows. Desert tortoises are also vulnerable to vehicle collisions on roads and highways. Drought, habitat degradation, and associated weed invasion lead to reduced nutrient quality of food plants; this increases desert tortoise susceptibility to upper respiratory tract disease, and possibly other diseases, which can be fatal and is transmittable among populations. Juvenile tortoises are vulnerable to predation by ravens; juvenile and adult tortoises are preyed upon by coyotes and domestic and feral dogs. Infrastructure development and urbanization creates perch sites and food and water sources for ravens, and increases numbers of dogs and coyotes, all of which elevate predation pressure on tortoises. Other factors affecting tortoises and their habitat include illegal collecting, vandalism, livestock grazing, feral burros, invasive non-native plants, changes to natural fire regimes, and environmental contaminants. Habitat fragmentation and development can isolate tortoise populations, further increasing risk of disease and reducing genetic diversity. This range of threats can kill or indirectly affect desert tortoises and their habitat, but little is known about the relative contribution each threat makes to tortoise demography. Current recovery planning (USFWS 2011c) focuses on expanding the knowledge of individual threats and places emphasis on understanding their multiple and combined effects on tortoise populations.

DHSP occurrence or effects: The DHSP site is not within designated critical habitat for the desert tortoise, but portions of the transmission line alternative alignments are within the Chuckwalla Critical Habitat Unit, west of Kaiser Road and near the I-10 Freeway (see Figure 6). The USFWS (2011c) identifies five recovery units for the desert tortoise based largely on geographic discontinuities or barriers that coincide with observed variation among tortoise populations. The DHSP and the gen-tie alternatives are located in the Colorado Desert Recovery Unit.

The nearest documented desert tortoise locations are on the Desert Sunlight project site, about 0.3 mile north of the DHSP site, and on gen-tie alignments B, C, and D (BLM 2011a; Ironwood Consulting 2010). In addition, a road-killed desert tortoise was observed at the Eagle Mountain off ramp on east-bound Interstate 10 approximately 7.5 miles southwest of the site (AMEC 2011a).

No live desert tortoises or recent sign were observed on the DHSP site or adjacent areas during the 2010 and 2011 field surveys. However, several desert tortoise burrows, designated as class 2 (good condition) and class 3 (deteriorated condition), and several disarticulated bone fragments, possibly originating from a desert tortoise, were located on the site. None of the burrows or other sign exhibited any evidence of recent use or corroborating sign. The occurrence of tortoise sign, even where no living tortoises are found during surveys, indicates desert tortoise presence (USFWS 2010a). Desert tortoises are found throughout the region and are mobile during their active seasons. Based on the presence of active desert tortoises on the adjacent project site and gen-tie alignments, we conclude that the entire Desert Harvest project site and all gen-tie alignments may be occupied by desert tortoises at any time, albeit only in low numbers. Project development would eliminate 1,208 acres of desert tortoise habitat and could kill or injure desert tortoises on the site. Project development will necessitate consultation between the BLM and USFWS per Section 7 of the ESA, and permitting from CDFG under Section 2080.1 or 2081 of the California Fish and Game Code.

Gila woodpecker (*Melanerpes uropygialis*): The Gila woodpecker is listed as endangered under CESA but has no status under the federal ESA. It is a bird species of conservation concern (USFWS 2008). Its geographic range is generally in southern Arizona and southward into Baja California and western mainland Mexico. It occupies this range year-around (i.e., it is not migratory). In California, Gila woodpeckers are known from riparian forests along the Colorado River, and from desert wash woodlands in Imperial County (McCreedy 2008). It excavates cavity nests in large riparian trees such as cottonwoods and (in upland habitats) saguaro cacti, and feeds largely on insects, mistletoe berries, and cactus fruits (Rosenberg et al. 1991; McCreedy 2008). Its primary habitat is Cottonwood-Willow Riparian Woodland, but it also uses thickets of other desert trees (e.g., desert ironwood), as well as upland habitats, especially outside the breeding season. Desert ironwood is apparently too dense for nest excavation. Where Gila woodpeckers occur in dry desert wash woodlands, they excavate cavity nests "invariably" in large blue palo verdes rather than ironwood (McCreedy 2008). In suburban habitats, they nest in ornamental trees including athel (*Tamarix aphylla*), gum trees (*Eucalyptus* spp.), and palms. Availability of suitable nesting trees is apparently a limiting factor in breeding habitat suitability (Grinnell and Miller 1944).

DHSP occurrence or effects: A Gila woodpecker was observed in the southeastern part of the project site in December 2010, but was not seen again during the BLM protocol winter season or breeding season avian point counts (AMEC 2011d).

The Desert Harvest project site is about 40 miles west of the Gila woodpecker's published geographic range (McCreedy 2008), but unpublished observations have been reported from Corn Springs, about 11 miles south of the site and about five miles south of the southern end of the gen-tie alignments (C. McGaugh, AMEC, pers. obs.). There is a native palm grove at Corn Springs, and Gila woodpeckers may nest in the palm trees. Also, a Gila Woodpecker was reported on September 28, 2010 during field surveys for the Desert Sunlight project (AMEC 2011d). It is possible that the Corn Springs and Desert Center areas support a small Gila woodpecker population, or that the two local observations in late 2010 were chance observations of an itinerant individual.

Desert wash woodlands on the Desert Harvest site may provide suitable nesting and foraging habitat for Gila woodpecker. The woodlands are dominated by desert ironwood trees, and most of the blue palo verdes are too small for cavity nests. However, scattered larger blue palo verde trees are present in low numbers throughout the woodlands, and could serve as suitable nest trees.

Although no Gila woodpecker observations were made on the site during breeding season surveys, it is possible that they may nest in desert wash woodland habitat on or near the site. Project development would eliminate up to 180 acres of potential nesting and foraging habitat for Gila woodpecker on the proposed solar generator site, and could also affect smaller areas of suitable habitat along gen-tie alignments. Habitat impacts on the gen-tie alignments would generally be limited to small areas around the transmission line structures, and increased human disturbance during construction, operations/maintenance, and decommissioning project phases.

In addition to habitat impacts, the project could cause mortality or injury to a Gila woodpecker (including juvenile birds or eggs), if an active nest were damaged or disturbed during construction or other phases of the project. Potential project impacts would be comparable to those described for nesting birds, below. As a state-listed species, any take of Gila woodpecker would necessitate CESA permitting under § 2081 of the California Fish and Game Code. Avoidance of take, as defined by the Fish and Game Code, could be achieved by implementing measures to avoid all nesting birds (see Native Birds: Migratory Bird Treaty Act / California Fish And Game Code, below).

Swainson's hawk (*Buteo swainsoni*):_The Swainson's hawk is listed as a threatened species under CESA but has no federal listing status. It is a migratory raptor. It breeds in open plains and prairies in the Great Plains and relatively arid areas of western North America, including the Central Valley and the western Mojave Desert in California. It winters in South America, primarily in Argentina. During the spring and fall migration seasons, Swainson's hawks are observed regularly in southern California.

DHSP occurrence or effects: One Swainson's hawk was observed flying over the Desert Harvest project site during April 2011 (AMEC 2011d). The project area may serve as incidental foraging habitat during migratory seasons, but otherwise would not support Swainson's hawks, due to the distance from its breeding range. Project development would not affect nesting habitat and has little likelihood of adversely affecting Swainson's hawk.

Species Protected Under the Federal Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668-668d; BGEPA) prohibits take of bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*). The BGEPA defines *take* to include "pursuing, shooting, shooting at, poisoning, wounding, killing, capturing, trapping, collecting, molesting, and disturbing." The USFWS (2007) further defines *disturb* as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

Golden Eagle (*Aquila chrysaetos*): Golden eagles are year-around residents throughout most of their range in the western United States. In the southwest, they are more common during winter when eagles that nest in Canada migrate south into the region. They breed from late January through August, mainly during late winter and early spring in the California deserts (Pagel et al. 2010). In the desert, they generally nest in steep, rugged terrain, often on sites with overhanging ledges, cliffs or large trees as cover. Golden eagles are wide-ranging predators, especially outside of the nesting season, when they have no need to return daily to eggs or young at their nests.

Threats to golden eagles include illegal shooting, power line electrocution, wind turbine strikes, and rodonticides (used for rodent control, and secondarily ingested by eagles feeding on target pest species). They also are affected by habitat loss or degradation due to land use changes such as urbanization and agriculture. The golden eagle population is estimated at approximately 30,000 in the western U.S., down from an estimated 100,000 in the late 1970s. Survey data from 2003 and 2006 to 2008 indicate a decline of 26 percent since 2003 (USFWS 2009a).

Golden eagle foraging habitat consists of open terrain such as grasslands, deserts, savanna, and early successional forest and shrubland habitats, throughout the regional foothills, mountains, and deserts. They prey primarily on rabbits and rodents but will also take other mammals, birds, reptiles, and some carrion (Kochert et al. 2002).

Absent interference from humans, the densities of breeding golden eagle territories is limited by either prey density or nest site availability (USFWS 2009a). Breeding season home range sizes vary widely. For example, in San Diego County, a study of 27 nesting pairs found breeding ranges to average 36 square miles with a range from 19 to 59 square miles (Johnsgard 1990). Eagles and other raptors forage more widely outside of the nesting season, since they have no need to return daily to eggs or young at their nests.

DHSP occurrence or effects: The mountain ranges surrounding the project site provide suitable golden eagle nesting and foraging habitat. Inactive golden eagle nests have been documented to the northwest, northeast, and south of the Desert Harvest site, and one active but non-reproductive nest was reported in the Coxcomb Mountains, about 5 miles northeast of the site (BLM 2011a).

The proposed solar generator site and gen-tie line alignments are on the Chuckwalla Valley floor, and do not provide suitable golden eagle nesting habitat. No on-site impacts to nest sites are expected, but golden eagles are sensitive to human disturbances during the nesting season. If there is an active nest nearby, then human activity and noise during project construction could adversely affect golden eagle nesting success. Most golden eagle nests in the surrounding mountain ranges were inactive in 2010 (Ironwood Consulting 2010). There was golden eagle activity, but not reproduction, at one nest site northeast of the DHSP site. However, even if golden eagle territories may be inactive in a given year, they may be used in future years. Therefore, unoccupied territories are considered potentially active in future years.

The project site and gen-tie alignments provide suitable golden eagle foraging habitat. Golden eagles could forage at the Desert Harvest site at any time of year. Foraging birds could include mated pairs using the surrounding nesting territories; or, if the territories are inactive, unmated golden eagles or adult birds whose nests may have failed, could forage over the site during breeding season. Foraging would probably be somewhat more common during winter and migration seasons due to larger numbers of golden eagles in the region and their larger winter foraging ranges.

If the project would take golden eagles, as defined by the BGEPA and USFWS (2007), above, then consultation with the USFWS would be required. The USFWS recommends evaluating potential impacts to nesting and foraging golden eagles by evaluating eagle use of the area and inventorying golden eagle territories if suitable nesting, roosting, and foraging habitat are present on a proposed project site or within a 10-mile radius of the site (Pagel et al. 2010). In addition to its federal status under the BGEPA, the golden eagle is designated by the California Fish and Game Code as a fully protected species and by BLM as a sensitive species (below).

Wildlife Species Fully Protected Under the California Fish and Game Code

Under the state Fish and Game Code, selected fish and wildlife species are designated as fully protected, prohibiting take except under permit for scientific purposes. Most of the designated fully protected species occur well outside the project vicinity, but several could occur in the area. These are: golden eagle (discussed above, Species Protected under the Bald and Golden Eagle Protection Act), selected populations of Nelson's bighorn sheep (discussed below, BLM Sensitive Wildlife Species), American peregrine falcon, and ring-tailed cat.

American peregrine falcon (*Falco peregrinus*): Peregrine falcons were formerly listed under CESA and ESA, but have been delisted under both Acts. They are found irregularly in the region, generally during migratory and winter seasons. They have not been known to nest in the region in recent decades, though they did nest in desert mountain ranges near the Colorado River historically (Rosenberg et al. 1991; Patten et al. 2003). They feed primarily on birds captured during flight. Waterfowl and shorebirds make up a large proportion of their prey, and nest sites are often within foraging range of large water bodies.

DHSP occurrence or effects: Project implementation would not affect nesting habitat and has little likelihood of adversely affecting foraging behavior.

Ring-tailed cat (*Bassariscus astutus*): The ring-tailed cat, or ringtail (it is unrelated to true cats), occurs throughout much of California and southwestern North America, in many habitat types, including forests, woodlands, and deserts. In deserts, it generally is found in steep or rocky terrain, and uses rock piles and bedrock crevices for shelter. It also dens in burrows, tree cavities, or brush piles (Wilson and Ruff 1999).

DHSP occurrence or effects: Habitat in the regional mountain ranges is suitable for ringtail, though habitat on the project site appears to be poorly suitable due to lack of suitable den sites and relatively low cover or shelter availability. The project is unlikely to cause take or other adverse impacts to ringtails.

BLM Sensitive Wildlife Species

The BLM maintains a list of Sensitive Wildlife Species, including species that are rare, declining, or dependent on specialized habitats (BLM 2010b). It manages sensitive species to provide protections comparable to species that may become listed as threatened or endangered (i.e., candidate species for federal listing). In addition to species addressed in this section of the BRTR, all listed threatened or endangered species (above) are managed as BLM sensitive species.

Couch's spadefoot (*Scaphiopus couchi*): Couch's spadefoot, like other spadefoot species, is an amphibian with appearance and life history characteristics similar to the true toads (*Bufo* spp.) but distinguished from that genus by several characteristics, especially the thickened sharp-edged "spades" on the hind feet, used for burrowing (Stebbins 2003). Couch's spadefoot is almost entirely terrestrial. It is dormant in burrows 20 to 90 cm deep for 8 to 10 months of the year (Jennings and Hayes 1994). It is active on the surface only during periods following warm summer rains, when it emerges to feed on insects and to reproduce. Successful reproduction requires warm rain pools which must hold water long enough to allow the eggs hatch and the tadpoles to develop, and then metamorphose into juvenile spadefoots. This has been reported to occur in as few as 7 to 10 days (Jennings and Hayes 1994; Grismer 2002), one of the fastest rates of metamorphosis among the frogs and toads.

In addition to summer rain pools, Couch's spadefoot requires soft, sandy soils for burrowing and generally is found at the edges of arroyos or in open soil around the bases of shrubs (Grismer 2002). Adult spadefoots make seasonal movements to and from breeding pools, but movement distances are unknown for this and other spadefoot species (Morey 2005).

Couch's spadefoot is widespread in the southwestern US and Mexico. The Colorado Desert in California is at the western margin of its geographic range. Stebbins (2003) indicates that it is restricted in California to a corridor immediately adjacent to the Colorado River, though Morey (2005) indicates a much broader distribution in the California deserts. In California, Couch's spadefoot is threatened by habitat conversion for other uses. It is ranked as a Species of Special Concern by CDFG and as a Sensitive Species by BLM.

DHSP occurrence or effects: Topography and drainage channel morphology on the proposed solar generation site and along the proposed gen-tie line indicate that no suitable breeding pools would form or hold rain water long enough for spadefoot reproduction. Upland habitat may be suitable as winter dormancy/burrowing habitat, depending upon the project site's proximity to breeding pools, the species' movement distances between borrow and breeding sites, and any specific habitat requirements for burrowing sites. Project development would not be expected to impact Couch's spadefoot breeding habitat and potential impacts to winter dormancy habitat appear to be minimal, based on lack of breeding pools in the area.

Banded Gila monster (*Heloderma suspectum cinctum*): The Gila monster is rare in California, and more common in Arizona and northwestern Mexico. It is a large and distinct lizard, but is difficult to observe even in areas where its occurrence is known. As a result, little is known about its distribution, population status, and life history in California. Most historical observations in California have been in riparian areas or at moderate elevations of the higher desert mountain ranges, in rocky, incised topography (Lovich and Beaman 2007). In California, the Gila monster is apparently confined to the eastern deserts (east of 116° longitude) where summer rainfall makes up 25 percent of average annual precipitation (Lovich and Beaman 2007). There has been only one report from farther west (the Mojave River). Throughout its range, the Gila monster appears to be most active during or following summer rains.

DHSP occurrence or effects: The project site may be west of the banded Gila monster's range, and habitat on the site appears to be only marginally suitable. Project development is unlikely to affect banded Gila monster.

Mojave fringe toed lizard (*Uma scoparia*): The Mojave fringe-toed lizard is known almost exclusively from California, primarily in San Bernardino and eastern Riverside Counties (Jennings and Hayes 1994). It is a California Species of Special Concern and BLM Sensitive Species. The northern lineage, associated with the Amargosa River drainage system, is under review for federal listing as a threatened or endangered population (USFWS 2008b), but its geographic range is well north of the DHSP site. The southern lineage is more widespread, ranging through the Mojave River drainage system, Bristol Trough, Clark's Pass (including the Chuckwalla Valley, Palen Lake and Pinto Wash), and the Colorado River sand transport systems.

The Mojave fringe-toed lizard is related to two other special-status species: the Colorado Desert fringe-toed lizard (U. notata), a BLM Sensitive Species that is found farther to the south; and the Coachella Valley fringe-toed lizard (U. inornata), a federally listed threatened and state listed endangered species endemic to the Coachella Valley, west of the Desert Harvest site. In addition, the flat-tailed horned lizard

(Phrynosoma mcallii) is a special-status species of similar habitats, but its geographic range is also well south of the Desert Harvest site.

The Mojave fringe-toed lizard is primarily insectivorous. It hibernates during winter, and emerges from hibernacula in March or April. During April and May, while temperatures are relatively cool, it is active during mid-day; during summer, it is active in mornings and late afternoon, but seeks cover during the hottest parts of the day.

The Mojave fringe-toed lizard is primarily found in fine, loose, aeolian (windblown) sand habitat (Turner et al. 1984; Jennings and Hayes 1994; Stebbins 1944). Availability of soft sand is an essential habitat component, though the lizards will also use other substrates surrounding aeolian sands. Mojave fringe-toed lizards burrow in the sand to avoid predators and to thermoregulate (Stebbins 1944), and lay their eggs in sand. Sand dunes are its primary habitat, although it also uses sands and surrounding habitats at the margins of dry lakebeds, washes, and isolated blowsand pockets against hillsides (BLM and CDFG 2002), and mixed habitat such as hummocks or pockets of soft sand interspersed with hard-packed sand (Cablk and Heaton 2002).

The Mojave fringe-toed lizard is widespread in the Mojave and northern Colorado deserts, but its distribution is patchy, reflecting the patchy distribution of suitable habitat (Murphy et al. 2006). Some localized populations consist of only a few animals in small, isolated habitat patches. This fragmented distribution leaves local populations vulnerable to extirpation from habitat disturbance, further fragmentation, or stochastic events (Murphy et al. 2006). Aeolian sand habitat is vulnerable to direct and indirect disturbances (Weaver 1981; Beatley 1994; Barrows 1996). Environmental changes that stabilize sand, affect sand sources, or block sand movement corridors will, in turn, affect Mojave fringe-toed lizard habitat and populations (Turner et al. 1984; Jennings and Hayes 1994). Threats to Mojave fringe-toed lizards and their habitat include habitat loss or damage from urban and agricultural development, vehicles, and indirect effects such as invasive weeds and increased habitat access by common ravens or other predators. Another important indirect disturbance is the potential disruption of sand source for the dune systems. Dune habitat that is cut off from its sand source will degrade over time as finer sands are blown away, leaving behind smaller dunes composed of coarser-textured sand.

DHSP occurrence or effects: Based on a habitat evaluation by Robert Black (2011), the DHSP site does not appear to provide suitable habitat for Mojave fringe-toed lizard. Ephemeral washes and channels throughout the proposed solar generator site provide patchy alluvial sand habitats but the sand was often cemented or compacted, and the sand depth and coarse texture were poorly suitable for Mojave fringe-toed lizard. The few isolated areas where deeper, loose sand was present were not large enough to support Mojave fringe-toed lizard.

Mojave fringe-toed lizards occur in aeolian sand habitat at the base the Coxcomb Mountains, east of Pinto Wash, about 1 mile northeast of the Desert Harvest project site. Aeolian sand in this area is within a sand transport corridor, originating upslope in JTNP, and continuing southeast to the Palen Dunes. The Desert Harvest project site is outside that sand transport corridor. The site is immediately downslope and downwind from the approved Desert Sunlight project area, now under construction. Environmental analysis of the Desert Sunlight project (BLM 2011) concluded that the site was not within the sand transport corridor, and that project development would not affect sand migration in the Pinto Wash / Palen Dunes corridor. However, portions of gen-tie Alternative E are within suitable habitat for Mojave fringe-toed lizard, and development of that alternative would be likely to take habitat and possibly take individual lizards. Based on our field work on the site, and on the analysis of adjacent Desert Sunlight project, we conclude that development of the other Desert Harvest project components (the solar generator site and gen-tie Alternatives B, C, or D) would not substantially affect Mojave fringe-toed lizard or aeolian sand transport in the Chuckwalla Valley.

Burrowing owl (*Athene cunicularia*): The burrowing owl is a BLM Sensitive Species and a CDFG Species of Special Concern. As a native bird, it is also protected by the federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (below). It is a small, terrestrial owl of open country. During breeding season, it ranges throughout most of the western US. It occurs year-around in southern California, but may be more numerous during fall and winter, when migratory individuals from farther north join the regional resident population. Burrowing owls favor flat, open annual or perennial grassland or gentle slopes and sparse shrub or tree cover. They use the burrows of ground squirrels and other rodents for shelter and nesting. Availability of suitable burrows is an important habitat component. Where ground squirrel burrows are not available, the owls may use alternate burrow sites or man-made features (such as drain pipes or debris piles). In the California deserts, burrowing owls generally occur in low numbers in scattered populations, but they can be found in much higher densities near agricultural lands where rodent and insect prey tend to be more abundant (Wilkerson and Siegel 2011). Burrowing owl nesting season, as recognized by the California Burrowing Owl Consortium (CBOC 1993), is 1 February through 31 August.

DHSP occurrence or effects: During the desert tortoise surveys for the Desert Harvest project site (above), AMEC field biologists examined all suitable burrows for sign of burrowing owls. These field surveys correspond to 100 percent coverage Phase II surveys for burrowing owls, recommended by the CBOC protocol (1993). No burrowing owls or their sign were observed during these spring season surveys, or during the winter and breeding season avian point count surveys. Due to the absence of burrowing owl sign, further focused burrowing owl surveys (i.e., Phase III surveys, per. CBOC) were not conducted for this project. However, two incidental burrowing owl observations were made by Aspen biologists during streambed delineation field work. In one observation, a burrowing owl was briefly seen perching and flying, but was not at a burrow. The other observation was a burrowing owl seen in the mouth of an inactive desert kit fox burrow; no burrowing owl sign (e.g., whitewash, prey remains, or owl pellets) was found at the site. Based on these field surveys and incidental observations, we conclude that the site is suitable habitat for burrowing owls during winter or breeding seasons. Breeding burrowing owls were not observed on the site during the surveys, but they could nest on the site in future years. During fall and winter, the site appears to serve as low-density seasonal burrowing owl habitat.

Bendire's thrasher (*Toxostoma bendirei*): Bendire's thrasher is a BLM Sensitive Species and CDFG Species of Special Concern. It is also protected under the federal MBTA and California Fish and Game Code, described further below. California populations are migratory, though it is found year-around in more southern portions of its range, in southern Arizona and adjacent Mexico. The Desert Harvest site is near the southern boundary of its breeding range in California. It breeds in open, upland desert shrublands of JTNP and surrounding area, and northward through several disjunct regions of the Mojave Desert (Sterling 2008). Its habitat requirements are poorly understood, but it is generally associated with *Yucca* (e.g., Joshua tree) and *Opuntia* (cholla cacti, also classified as *Cylindropuntia*) species on gently sloping terrain. Soil texture is apparently important to habitat suitability, perhaps because Bendire's thrashers largely forage on ground-dwelling insects. Hard rocky soils (e.g., desert pavement) and loose sands (e.g., dry wash sands) are apparently less suitable than firmly packed, fine-textured soils.

DHSP occurrence or effects: Bendire's thrashers were not observed on the project site during the winter or breeding-season point-count surveys. Habitat throughout the site appears to be of marginal suitability, due to relatively low cover of *Yucca* and *Opuntia* species, and seemingly poorly-suitable soil texture. There is a low to moderate probability that Bendire's thrasher may occur on the site.

Lucy's warbler (*Vermivora luciae*): Lucy's warbler is a migratory songbird that breeds in desert riparian woodlands and winters on Pacific Coast of mainland Mexico. Its breeding range extends through much of Arizona, and parts of the eastern California deserts. It is a cavity-nesting species (i.e., it generally nests in unoccupied woodpecker nests or other cavities in trees). Its primary nesting habitat is mesquite thickets, but also uses native riparian trees and saltcedar (*Tamarix* spp.).

DHSP occurrence or effects: Two singing male Lucy's warblers were reported in April 2011 near the southwestern corner of the project area (AMEC 2011). These birds were not observed later during the nesting season point counts (28 April survey date), but no focused surveys were conducted. It is unknown whether either or both of these birds successfully established breeding territories in the area, or moved on to another site. Suitable nesting cavities may be available in large blue palo verde trees on the site, but probably not in the more dominant desert ironwood trees (see Gila woodpecker discussion, above). The nests of Lucy's warblers are sometimes placed behind loose bark, so there is some potential for them to nest in ironwood trees. Lucy's warblers may nest in desert wash woodlands on or near the proposed solar facility site or gen-tie alignment alternatives.

Project development would eliminate up to 180 acres of potential nesting and foraging habitat for Lucy's warbler on the proposed solar generator site, and could also affect smaller areas of suitable habitat along gen-tie alignments. In addition to habitat impacts, the project could cause mortality or injury to a Lucy's warbler (including juvenile birds or eggs), if an active nest were damaged or disturbed during construction or other phases of the project. Potential project impacts would be comparable to those described for nesting birds, below.

Nelson's bighorn sheep (*Ovis canadensis nelsoni*): Nelson's bighorn sheep are known from the Transverse Ranges, California Desert Ranges, Nevada, northern Arizona, and Utah. Its populations in the Peninsular Ranges (the Santa Rosa and San Jacinto Mountains, and southward into Baja California) are federally listed as a threatened distinct vertebrate population segment. However, populations in eastern Riverside County have no CESA or ESA listing status. It is a BLM Sensitive Species and, except where designated otherwise by CDFG, is fully protected under the state Fish and Game Code. Threats to Nelson's bighorn sheep include habitat loss or degradation; limited availability of water sources; barriers to local or regional movement (e.g., highways and aqueducts); disease spread by domestic livestock; and natural predation by mountain lions in some populations.

DHSP occurrence or effects: Habitat in the desert mountain ranges surrounding the upper Chuckwalla Valley is occupied by Nelson's bighorn sheep, and they occasionally use the valley floor habitat. Ungulate tracks, from either Nelson's bighorn sheep or burro deer, were observed on the site during the streambed delineation work. Project construction would not cause habitat degradation in the mountains, though construction could cause noise and human disturbance as described above for golden eagle nesting territories. Bighorn sheep tend to acclimate to these activities in areas where such disturbances occur routinely (e.g., quarries; Jansen et al. 2009). Due to the project's location on the valley floor near sites with comparable land uses and human activity patterns, the project is not likely to affect bighorn sheep behavior or habitat use to any large extent. However, the project could affect bighorn sheep movement among the mountain ranges (see Wildlife Movement, below).

Bats: The BLM includes several bat species on its list of sensitive species. The special status bats of the local area roost in rock crevices, tunnels, or caves; one species (western yellow bat, *Lasiurus xanthinus*) roosts in the foliage of riparian trees. Roost sites may be used seasonally (e.g., inactive cool seasons) or daily (day roosts, used during inactive daylight hours). Maternity roosts are particularly important overall for bat life histories. Knowledge of bat distributions and occurrences is sparse. The majority of adverse impacts to bat populations in the region result from disturbance of roosting or hibernation sites, especially where large numbers of bats congregate; physical closures of old mine shafts, which eliminates roosting habitat; elimination of riparian or desert wash microphyll vegetation which is often productive foraging habitat; more general habitat loss or land use conversion; and agricultural pesticide use which may poison bats or eliminate their prey-base (Pierson & Rainey 1998; Gannon 2003). Bat life histories vary widely. Some species hibernate during winter, or migrate south. During the breeding season, bats generally roost during the day, either alone or in communal roost sites, depending on species. All special-status regional bats are insectivorous, catching their prey either on the wing or on the ground. Some species feed mainly over open water where insect production is especially high, but others forage over open shrublands such as found on the project site.

DHSP occurrence or effects: Project development is unlikely to affect special-status bat roost sites, but would eliminate 1208 acres of desert shrubland foraging habitat, including 180 acres of productive dry desert wash foraging habitat, and would also affect smaller areas of suitable foraging habitat along gen-tie alignments.

Palm Springs round-tailed ground-squirrel (*Xerospermophilus tereticaudus chlorus*): Palm Springs round-tailed ground squirrel (also called Coachella Valley round-tailed ground squirrel) is a California Species of Special Concern, on the BLM Sensitive Species list, and was a candidate for federal listing as threatened or endangered prior to 2010, when it was removed from the list of candidates (USFWS 2010). Until recently, it was believed to be limited in range to the Coachella Valley region. Within that area, its primary habitat is mesquite (*Prosopis glandulosa*) hummocks and associated sand dunes and, to a lesser extent, dunes and hummocks associated with creosote bush or other vegetation. The primary threats to its habitat are land use changes and groundwater pumping, both of which have eliminated much of the honey mesquite from the Coachella Valley area. Recent research indicates that its range is substantially larger than previously understood, extending at least 150 miles northward to Hinkley Valley and Death Valley. Based on this range extension; the protected habitat in Death Valley National Park; and ongoing conservation efforts in the Coachella Valley, the USFWS concludes that it no longer warrants candidate status. The expanded understanding of Palm Springs round-tailed ground-squirrel's geographic range also seems to indicate that it uses a broader range of habitat than previously understood.

DHSP occurrence or effects: Palm Springs round-tailed ground squirrel was reported near the proposed gen-tie line in the Desert Sunlight EIS (BLM 2011) and on the DHSP site during AMEC's field surveys (2011d). Habitat in that area lacks the aeolian sands and mesquite hummocks that characterize its primary habitat as previously understood (see text under Mojave fringe-toed lizard, above). Palm Springs round-tailed ground squirrel appears to occur throughout the area though, but no mesquite or dune habitat would be affected by the project.

Other Special-Status Wildlife Species

In addition to the statutes and policies described above, several public agencies and private entities maintain lists of wildlife species animals of conservation concern. The CDFG compiles these in its compendium of and "Special Animals." These species are treated here as "special-status species."

Rosy boa (*Charina trivirgata*): The rosy boa occurs in rocky shrublands from sea level to about 6700 feet elevation. In the coastal regions, it is found south and west of the major mountain chains, in the interior valleys and mountains of Los Angeles, Riverside, San Bernardino, and Orange counties, southward to the coast in San Diego County and Baja California. In the deserts, rosy boas range throughout most of the Mojave Desert and much of the Colorado Desert, eastward into Arizona. They are active during warm seasons, and are primarily nocturnal. The CDFG Natural Diversity Data Base considers rosy boa a "special animal" but it has no formal status under state or federal Endangered Species Acts.

DHSP occurrence or effects: Habitat at the Desert Harvest project site may be marginally suitable for rosy boa, but lacks the boulders or rock crevices of their primary habitat. The site is within their geographic range and could be occupied at low density.

Raptors: In addition to raptors discussed above, several other special-status birds of prey are found seasonally, especially during winter, in the region. These include osprey (*Pandion haliaetus*), ferruginous hawk (*Buteo regalis*), Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*A. striatus*), northern harrier (*Circus cyaneus*), prairie falcon (*Falco mexicanus*), merlin (*F. columbaris*), short-eared owl (*Asio flammeus*), and long-eared owl (*A. otus*) (Table 4). Osprey and sharp-shinned hawk were observed flying over the site during winter season point count surveys, but neither species would nest in the area (AMEC 2011d). Outside their breeding seasons, these raptors need not return to their nests to feed young or tend eggs. Thus, they are able to forage over wide areas, where they capture birds or small mammals. Suitable winter or migratory season foraging habitat for all of these raptors is widely available throughout the region.

DHSP occurrence or effects: Potential project impacts to these species and their foraging habitat would be comparable to those discussed above for wintering golden eagles. In summary, project construction would eliminate 1,208 acres of suitable foraging habitat, cause increased noise and disturbance to adjacent habitat, and may present collision or electrocution hazards, such as the gen-tie line and other project facilities.

Upland perching birds: Several upland perching bird species are included in the CDFG Special Animals compilation. These include loggerhead shrike (*Lanius ludovicianus*), Bendire's thrasher (*Toxostoma bendirei*) LeConte's thrasher (*T. lecontei*), Crissal thrasher (*T. crissale*), the Eagle Mountains scrub-jay population (*Aphelocoma californica cana*), and vermilion flycatcher (*Pyrocephalus rubinus*). In addition, a Vaux's swift (*Chaetura vauxi*) was observed over the site during migration season (AMEC 2011); this species occurs in the area only during migration; it nests well to the north, and project development would be unlikely to affect Vaux's swift.

DHSP occurrence or effects: Loggerhead shrikes were observed on the site routinely throughout the winter and breeding season avian point count surveys (AMEC 2011d). Neither LeConte's thrasher nor Crissal thrasher have been reported on-site, but habitat is suitable and either species could occur there. Project development would eliminate 1,208 acres of suitable habitat for these species at the solar generator site, and would also affect smaller areas of suitable habitat along gen-tie alignments. Vermilion flycatchers have not been reported on-site, but nest in similar habitat to the south (AMEC 2011d) and could nest in ironwood woodlands on-site in future years. Project development would eliminate 180 acres of suitable desert woodland habitat at the solar generator site, and would also affect smaller areas of suitable habitat along gen-tie alignments. The Eagle Mountains scrub-jay population resides year-around in pinyon woodlands in the Eagle Mountains. It is disjunct from other scrub-jay populations, and is on CDFG's "watch list" but has no other special conservation status. A scrub-jay was observed on the project site in October 2011; presumably, it was wandering or dispersing from habitat in the Eagle Mountains. However, this bird could have come from much farther away. Scrub-jays of the Great Basin population and can wander considerable distances. However, no suitable scrub-jay habitat is found in the project area. Other potential impacts to these species would be similar to those discussed below, under the MBTA.

Wide-ranging mammals: Several mammal species range widely through desert habitats, either among partially isolated mountain ranges (e.g., Nelson's bighorn sheep, above) or more often in valleys. These include Yuma mountain lion (*Felis concolor browni*), burro deer, or desert mule deer (*Odocoileus hemionus eremicus* [= *O. h. crooki*]), American badger (*Taxidea taxus*) and desert kit fox (*Vulpes macrotis arsipus*). Desert kit fox is not listed as a special-status species by CDFG or USFWS, but it is protected under the California Code of Regulations (Title 14, § 460).

DHSP occurrence or effects: Sign of American badger and desert kit fox were located on the site during field surveys for desert tortoise and other resources. Ungulate tracks, from either Nelson's bighorn sheep or desert mule deer, were observed on the site during the streambed delineation work. The project would eliminate approximately 1,208 acres of habitat that is suitable for each of these species, though used only rarely by Nelson's bighorn sheep, Yuma mountain lion, or desert mule deer.

WILDLIFE MOVEMENT

The extent, distribution, and accessibility of suitable habitat affect the long-term viability of regional wildlife populations. Fragmentation and isolation of natural habitat ultimately results in the loss of vulnerable native species within those areas (Soulé et al. 1988). Accessibility among habitat areas, i.e., "connectivity," is important to long-term genetic diversity and demography of wildlife populations. In the short term, it may also be important to individual animals' ability to occupy their home ranges, if their ranges extend across a potential movement barrier. These considerations are especially important for rare, threatened, or endangered species such as the desert tortoise, and wide-ranging species which exist in low population densities such as large mammals. Therefore, this discussion of potential project impacts to wildlife movement focuses on desert tortoise and Nelson's bighorn sheep. However, these conditions are also relevant for other species, including corridor "passage" and corridor "dweller" species (Beier and Loe 1992). Corridor passage species would traverse connectivity areas during ordinary diurnal or seasonal movement patterns, whereas corridor dweller species must persist as viable populations over multiple generations within a connectivity area in order to eventually migrate from one habitat block to another. The upper Chuckwalla Valley, where the Desert Harvest site is located, appears to be an important linkage between desert tortoise populations in the Colorado and Mojave deserts (USFWS 2011b).

In landscapes where native habitats exist as partially isolated patches surrounded by other land uses, planning for wildlife movement generally focuses on "wildlife corridors" to provide animals with access routes among habitat patches. In largely undeveloped areas, including the Chuckwalla Valley, wildlife habitat is available in extensive open space areas throughout much of the region, but specific barriers may impede or prevent movement. In these landscapes, wildlife movement planning focuses on specific sites where animals can cross linear barriers (e.g., wash crossings beneath the I-10 freeway), and on broader linkage areas which may support stable, long-term populations of target species.

In the Chuckwalla Valley, the biologically important functions of large mammal movement are the long-term demographic and genetic effects of occasional animal movement among mountain ranges and other large habitat areas. Animals such as Nelson's bighorn sheep may travel across the valley infrequently, as a part of dispersal among subpopulations. Animals may also use bajada habitat, including habitat on the project site, for seasonal foraging, as part of its regular home range. These large animals are example of corridor "passage" species. In contrast to large animal movement, desert tortoises and other less-mobile animals may live out their entire lives within a linkage area between larger habitat blocks; for these species, movement among mountain ranges may take place over the course of several generations (Beier and Loe 1992). The USFWS (2011b) recommends maintaining large areas of occupied desert tortoise habitat in important linkage areas, including the upper Chuckwalla Valley. Within these linkage areas, desert tortoises should be "dweller" species.

A state-wide evaluation of habitat connectivity (Spencer et al. 2010) includes the upper Chuckwalla Valley, including the project area, among areas identified as "Essential Connectivity Areas." The report describes these as follows: "Essential Connectivity Areas are placeholder polygons that can inform land-planning efforts, but that should eventually be replaced by more detailed Linkage Designs, developed at finer resolution based on the needs of particular species and ecological processes" (p. xiii). Spencer et al. (2010) recommend siting renewable energy projects in the Sonoran Desert region where they will not block potential wildlife movement corridors, and make several other recommendations related to roadway crossings and fencing (p. 69). In Chapters 4 and 5, Spencer et al. (2010) provide "frameworks" for regional and local scale connectivity analysis. Within the Chuckwalla Valley, these regional and local analyses have not been completed.

BLM management strategies for wildlife and habitat, including management to maintain connectivity among habitat areas, include special management of Areas of Critical Environmental Concern (ACECs), Wilderness Areas, Wilderness Study Areas, Wildlife Habitat Management Areas (WHMAs) and Desert Wildlife Management Areas (DWMAs). Certain BLM lands within the Chuckwalla Valley and near the Project area are designated as ACECs, WHMAs, and DWMAs (Figure 6). Extensive natural habitat areas within JTNP, north of the project site, are also important to regional wildlife habitat connectivity.

The Chuckwalla Valley is bordered on the south by the Chuckwalla Mountains, south of the I-10; and on the north by the Eagle Mountains and Coxcomb Mountains, both within JTNP, north of the Colorado River Aqueduct (Figure 9). Opportunity for wildlife movement among these mountain ranges is significantly impeded by the I-10 Freeway and the aqueduct. A few other existing linear features (paved roads, the disused Kaiser rail line, unpaved roads, transmission line and pipeline access roads parallel to the freeway) but have only minimal effects on wildlife movement for some species, but may be partial barriers for others. Non-linear impediments to wildlife movement include residential land uses around Lake Tamarisk and Eagle Mountain; the closed Eagle Mountain quarry and associated overburden deposits, evaporation ponds, and other facilities, and the active and disused agricultural lands throughout the valley.

Some species, such as coyote, may learn to cross the freeway safely. But for most terrestrial species the freeway presents an impassable or high risk barrier to north-south movement (evident by the road-killed desert tortoise observed on the Eagle Mountain Road off ramp of the I-10 in 2010). There are potential wildlife crossings beneath the freeway at scattered wash crossings (e.g., box culverts) and at the underpasses at Desert Center Road and Eagle Mountain Road. These crossings are accessible to many terrestrial wildlife species, but many of the box culverts are inaccessible to small animals, probably including desert tortoises, due to vertical steps of about 2 feet on the downstream ends of the culverts (see Photo Exhibits). Also, while the crossings are large enough for physical access to any species, specific behavioral adaptations affect the likelihood that any given species would use them. Mountain lions or coyotes would likely cross through the culverts routinely, but deer and bighorn sheep may avoid them if they perceive the culverts as too confining for escape.

The portion of the aqueduct where water flows in an uncovered surface canal (i.e., through the northern part of the Chuckwalla Valley, near the JTNP boundary) presents an impassable barrier, except at periodic "siphon" points, where desert washes cross over the aqueduct. At these crossings, aqueduct water is carried underground through U-shaped siphons over distances of several hundred feet or more.

Figure 9 indicates the locations of potential wildlife crossings along the freeway and aqueduct. Burro deer have been documented crossing similar aqueduct siphons in Arizona (Tull and Krausman 2001).

The DHSP site is located roughly midway between the three mountain ranges that surround the upper Chuckwalla Valley. Land ownership in the valley is a patchwork of public BLM lands and private lands. Many, but not all, of the private parcels are in land uses incompatible with wildlife habitat or movement. The project site is adjacent to a small (ca. 40 acre) date palm orchard near its southeastern corner; about 1 mile north of agricultural lands on about 1,000 acres; and about 0.25 mile west of another large agricultural tract, also covering about 1,000 acres. These agricultural lands would likely be passable to "corridor passage" species, such as large mammals. Disused agricultural lands may also be suitable for some "dweller" species, including small mammals and reptiles, but they are poorly suitable for desert tortoises. The site presently contributes to suitable desert tortoise movement routes from southwest to northeast, between the Chuckwalla DWMA (west of the site) and the Coxcomb Mountains.

Construction of the Desert Harvest project would exclude most terrestrial wildlife species from the site. The project's individual impacts to wildlife movement in the area would be relatively unimportant, because extensive areas of natural open space would continue to provide movement habitat around the site, especially to the east and north. However, in combination with other land uses in the Chuckwalla Valley including the recently approved Desert Sunlight project, the Desert Harvest project would contribute to the cumulative loss of wildlife movement habitat, described by the USFWS (2011b). The applicant, enXco, is working with Wildlands, Inc., a private firm specializing in habit preservation and management, to identify and acquire suitable compensation lands to mitigate the project's potential impacts to regional wildlife movement.

NATIVE BIRDS: MIGRATORY BIRD TREATY ACT / CALIFORNIA FISH AND GAME CODE

The federal Migratory Bird Treaty Act (MBTA) prohibits take of any migratory bird, including eggs or active nests, except as permitted by regulation (e.g., hunting waterfowl or upland game species). Under the MBTA, "migratory bird" is broadly defined as "any species or family of birds that live, reproduce or migrate within or across international borders at some point during their annual life cycle" and thus applies to most native bird species. California Fish and Game Code § 3503 prohibits take, possession, or needless destruction of bird nests or eggs; § 3503.5 prohibits take or possession of birds of prey or their eggs; and § 3513 prohibits take or possession of any migratory nongame bird. With the exception of a few non-native birds such as European starling, the take of any birds or loss of active bird nests or young is regulated by these statutes. Most of these species have no other special conservation status as defined above.

The entire project site and surrounding area provides suitable nesting habitat for numerous resident and migratory bird species (AMEC 2011d). Many adult birds would flee from equipment during initial vegetation clearance for project construction. However, nestlings and eggs would be vulnerable during project construction. If initial site grading or brush removal were to occur during nesting season, then it likely would destroy bird nests, including eggs or nestling birds. For most birds, these impacts can be avoided by scheduling initial clearing and grading outside the nesting season. Or, if initial clearing and grading are undertaken during nesting season, work may be limited only to areas where no nesting birds are present, as documented by pre-construction nest surveys. One special-status species, the burrowing owl, is unlikely to flee the site during construction even outside the nesting season, due to its characteristic behavior of taking cover in burrows. Avoidance of burrowing owls during initial clearing and grading necessitates pre-construction surveys for active burrows, and follow-up measures to "passively relocate" the owls if they are present. Passive relocation requires under authorization from CDFG.

Some birds will likely nest in the project area during construction, even after initial grading and clearing. Depending on the species, birds may nest on the ground close to equipment; within the open metal framework of the panel support structures; on buildings, foundations, structures, or construction trailers; or on idle vehicles or construction equipment left overnight or during a long weekend. In areas where construction is phased (e.g., footings or tower structures) birds may quickly use these features as nest sites. The species most likely to nest in the project area during construction are common ravens, house finches (*Carpodacus mexicanus*), and mourning doves (*Zenaida macroura*), all of which are protected by the MBTA and Fish and Game Code §§ 3503 and 3513. Due to the high probability that birds may nest on site during construction, regular monitoring is necessary throughout the breeding season. In some cases, it may be necessary to reduce buffer areas or to remove or relocate a bird nest in coordination with the resource agencies to proceed safely with construction.

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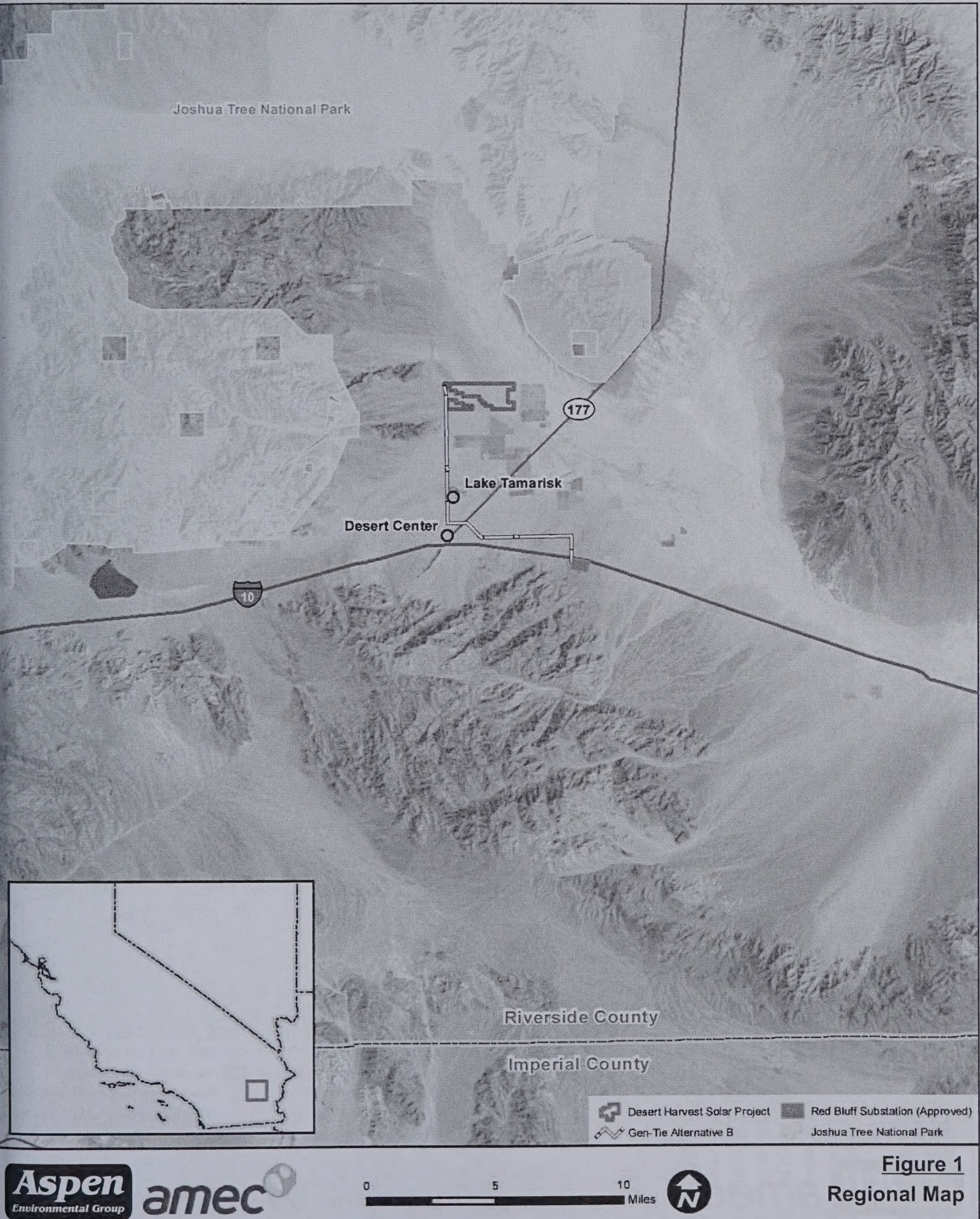
Joshua Tree National Park
177
Lake Tamarisk
Desert Center
10
Riverside County
Imperial County
Desert Harvest Solar Project
Gen-Tie Alternative B
Red Bluff Substation (Approved)
Joshua Tree National Park
0
5
10
Miles
N

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amec

Figure 1
Regional Map

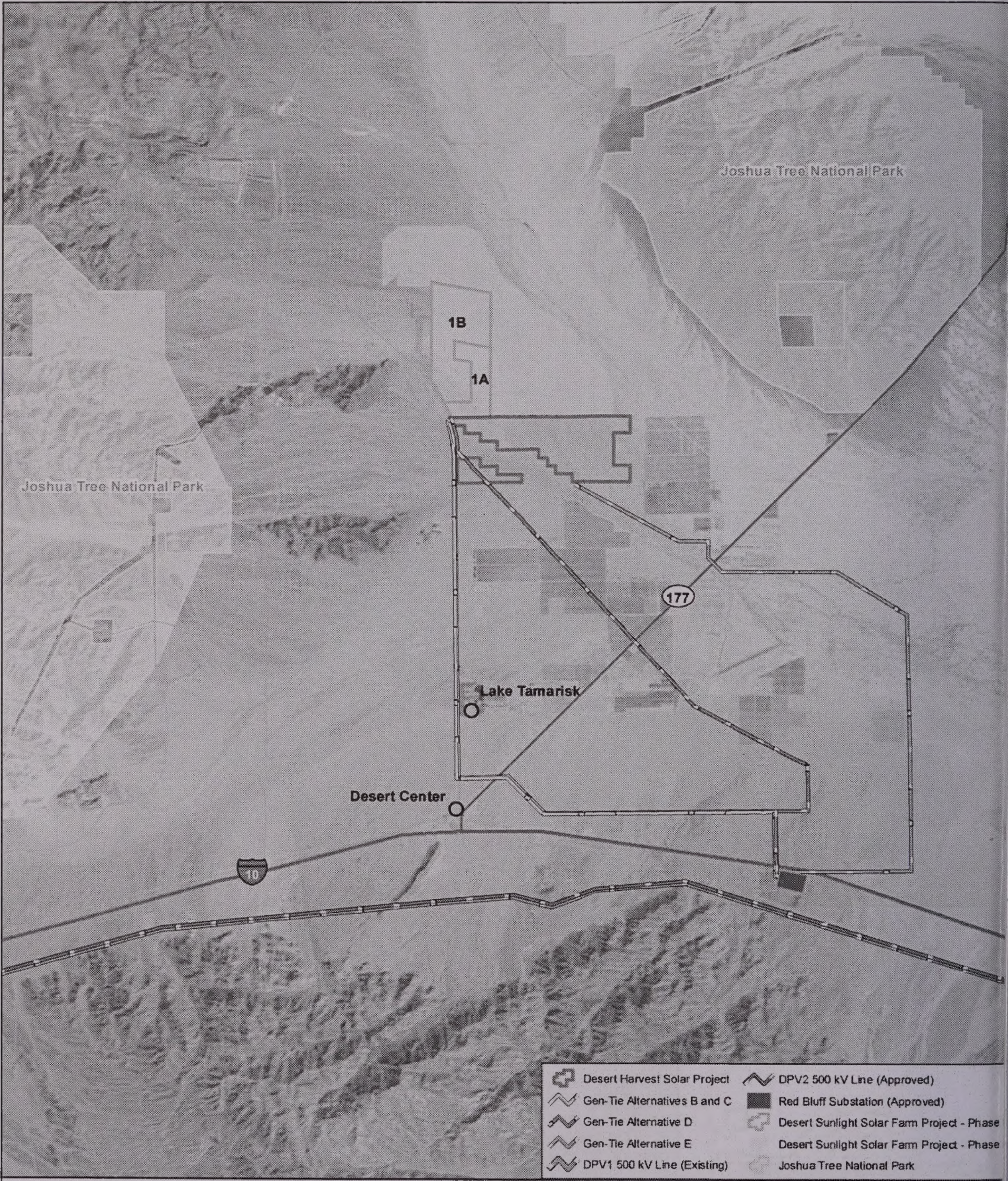
Joshua Tree National Park
Joshua Tree National Park
1B
1A
177
Lake Tamarisk
Desert Center
10
Desert Harvest Solar Project
Gen-Tie Alternatives B and C
Gen-Tie Alternative D
Gen-Tie Alternative E
DPV1 500 kV Line (Existing)
DPV2 500 kV Line (Approved)
Red Bluff Substation (Approved)
Desert Sunlight Solar Farm Project - Phase
Desert Sunlight Solar Farm Project - Phase
Joshua Tree National Park
0
2
4
Miles
N

Figure 2

Project and Vicinity

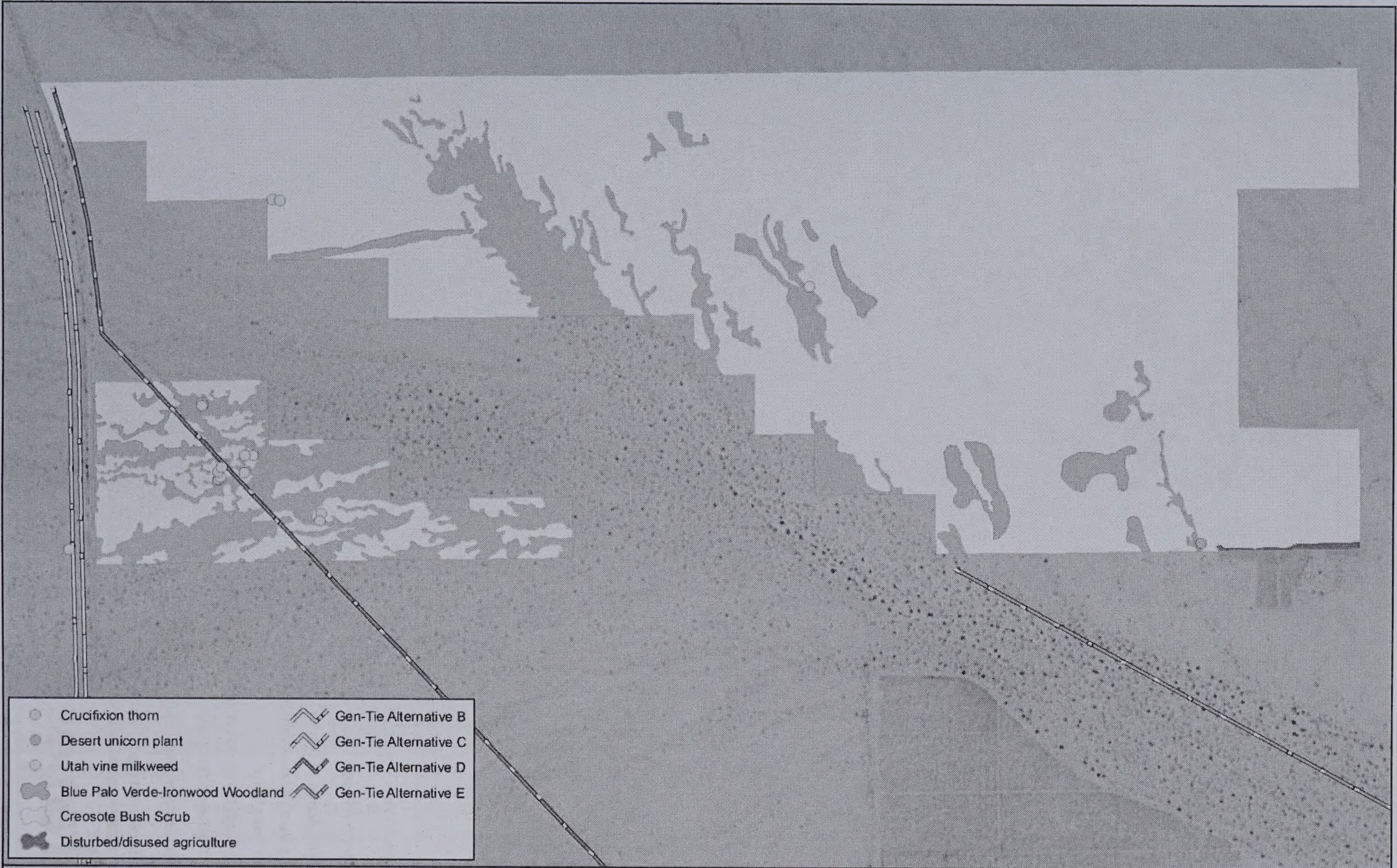

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Figure 3

Vegetation and Special Status Plant Locations: DHSP site

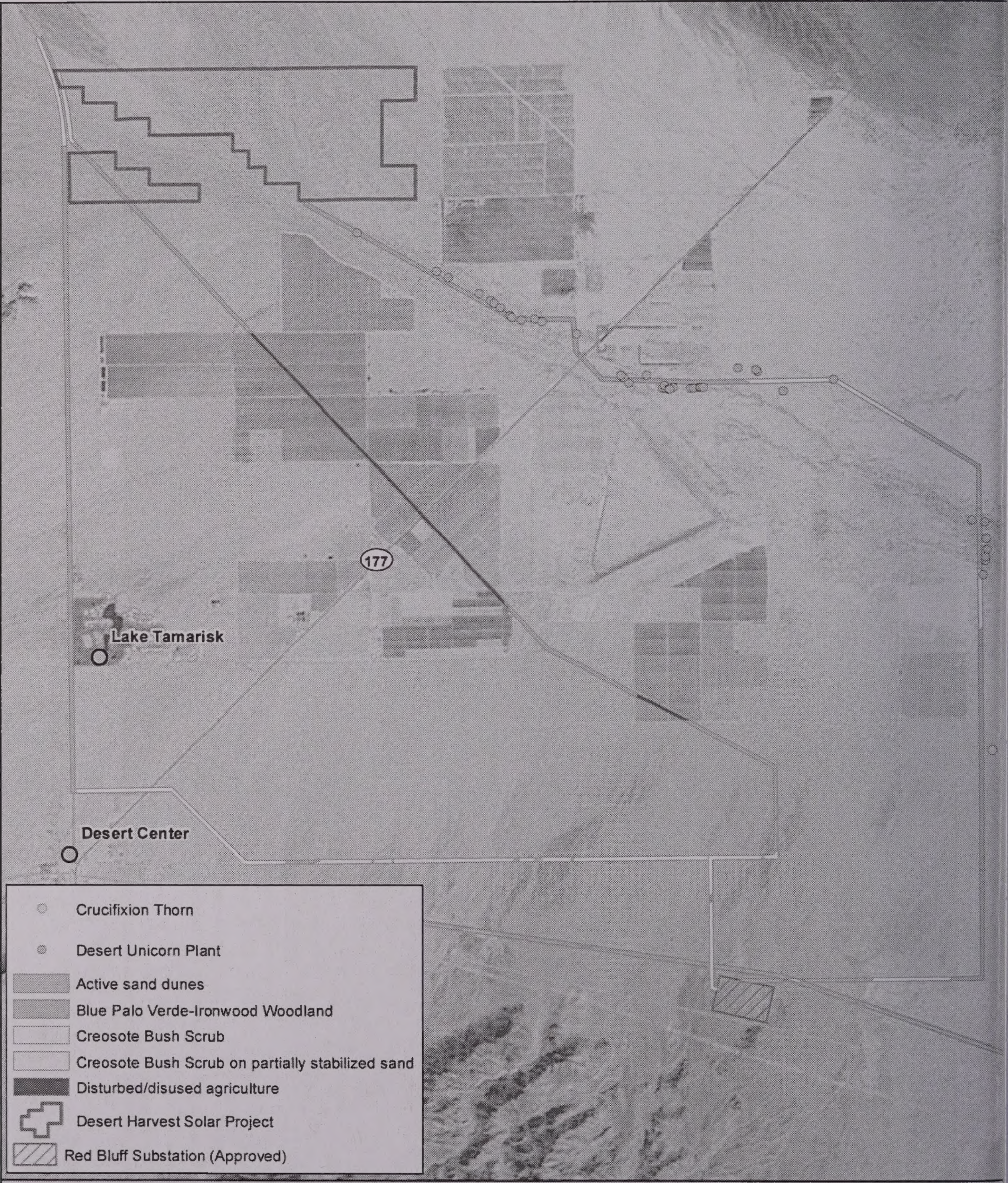
177
Lake Tamarisk
Desert Center
Crucifixion Thorn
Desert Unicorn Plant
Active sand dunes
Blue Palo Verde-Ironwood Woodland
Creosote Bush Scrub
Creosote Bush Scrub on partially stabilized sand
Disturbed/disused agriculture
Desert Harvest Solar Project
Red Bluff Substation (Approved)
N
0
0.5
1
2
Miles

Figure 4
Vegetation and Special Status Plant Locations: Gen-tie Line Alignments

January 201

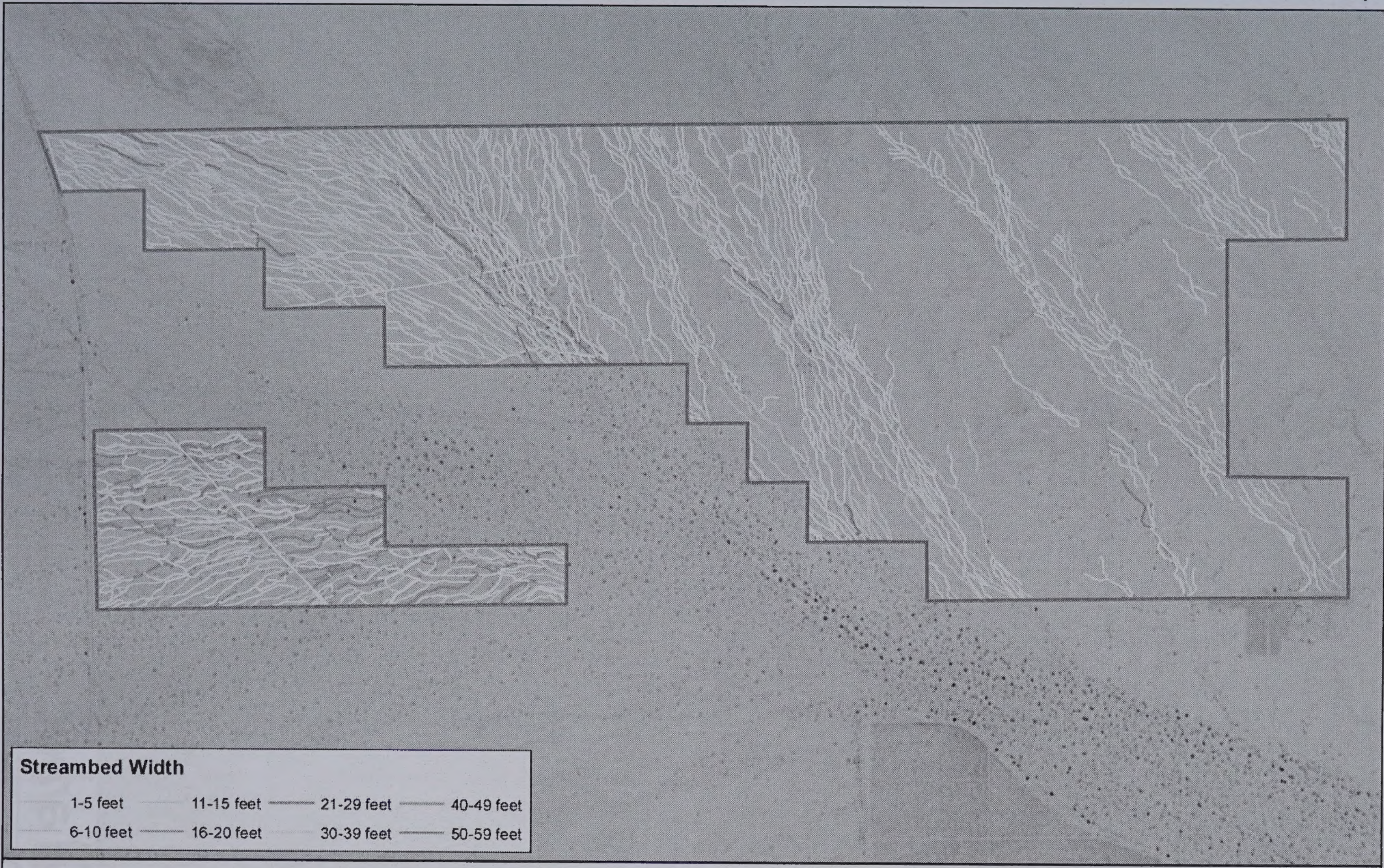

Figure 5

CDFG Jurisdictional Streambeds

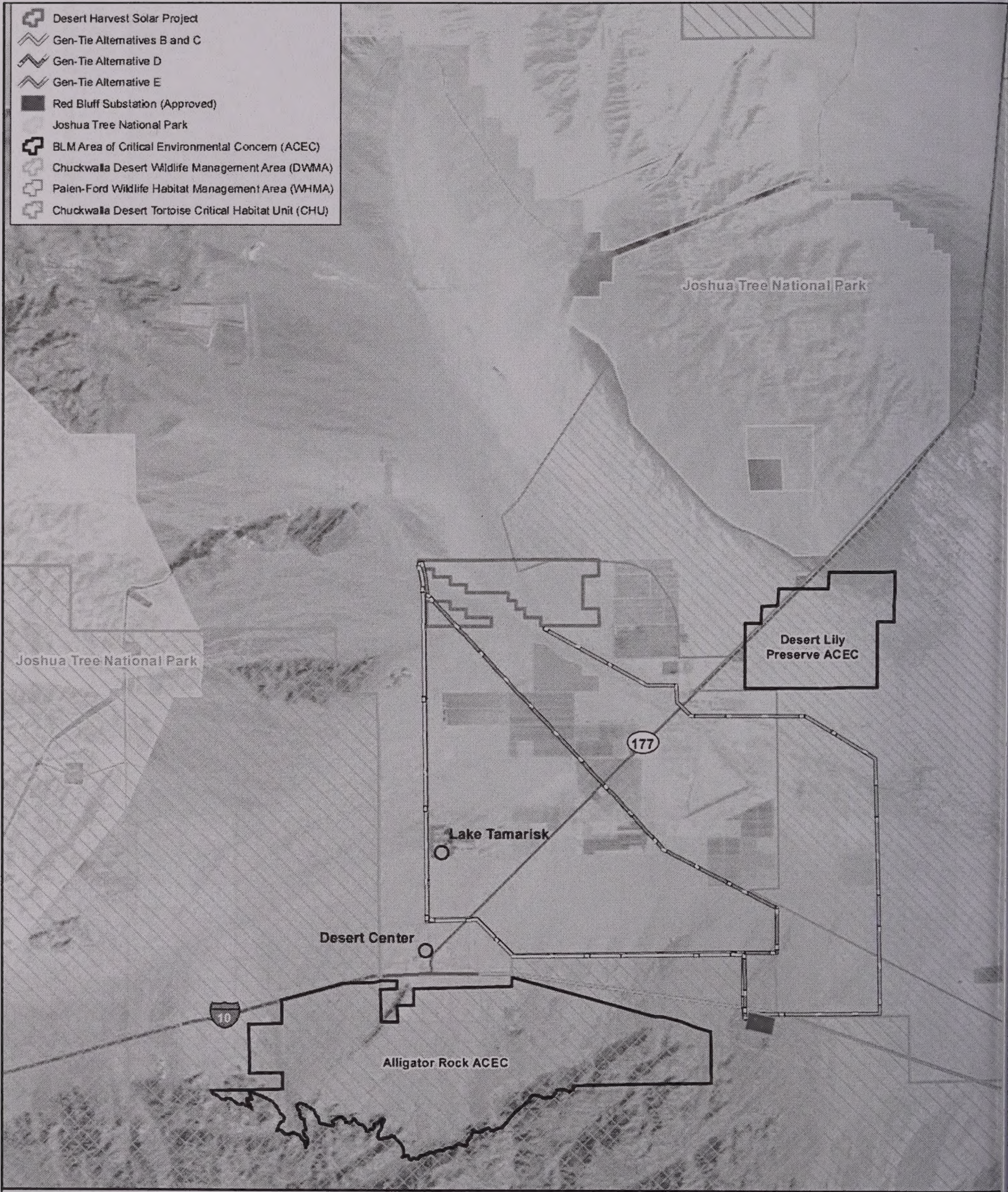
Desert Harvest Solar Project
Gen-Tie Alternatives B and C
Gen-Tie Alternative D
Gen-Tie Alternative E
Red Bluff Substation (Approved)
Joshua Tree National Park
BLM Area of Critical Environmental Concern (ACEC)
Chuckwalla Desert Wildlife Management Area (DWMA)
Palen-Ford Wildlife Habitat Management Area (WHMA)
Chuckwalla Desert Tortoise Critical Habitat Unit (CHU)
Joshua Tree National Park
Joshua Tree National Park
Desert Lily Preserve ACEC
177
Lake Tamarisk
Desert Center
10
Alligator Rock ACEC
0
2
4
Miles
N

Figure 6
Wildlife Management Areas

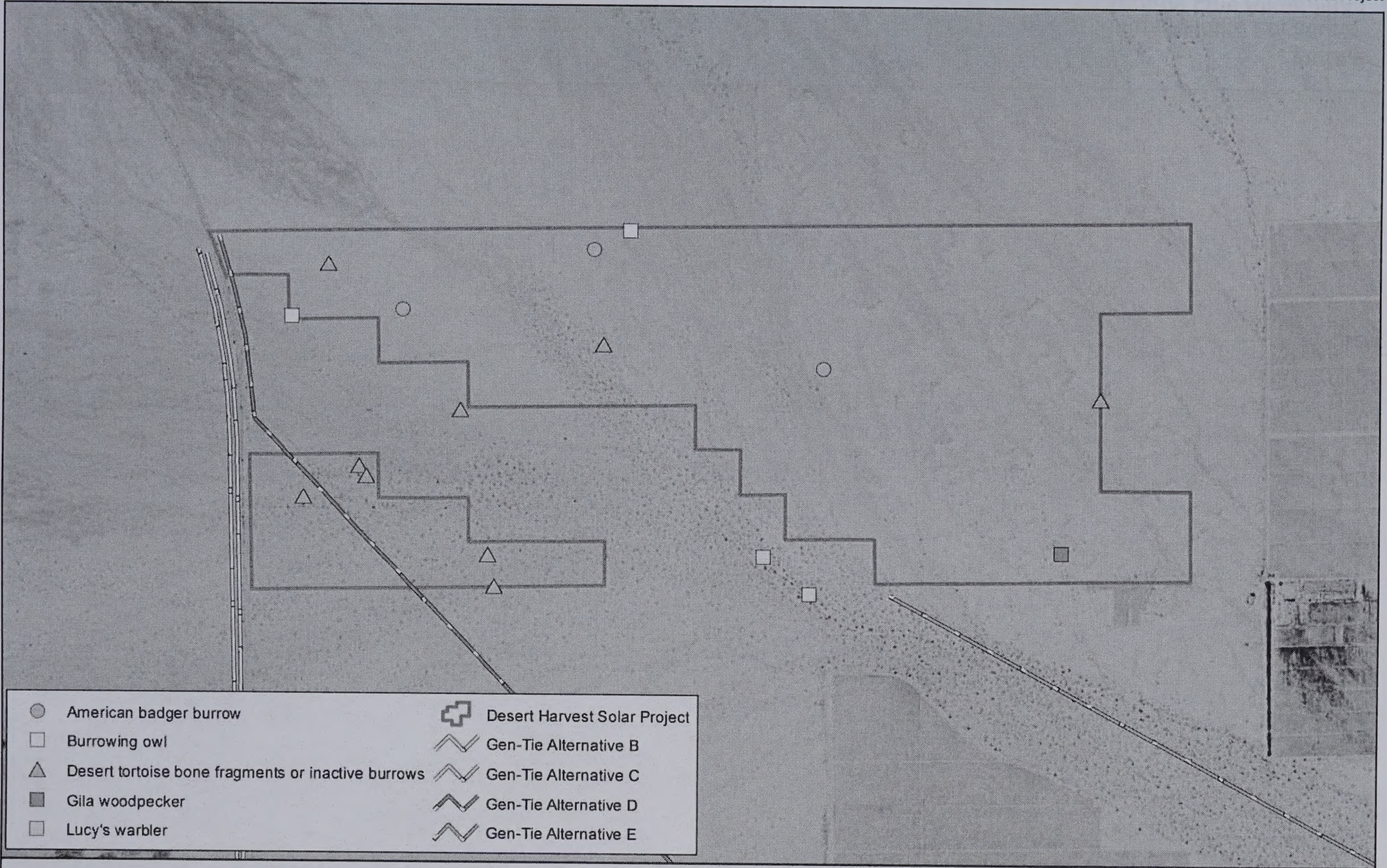

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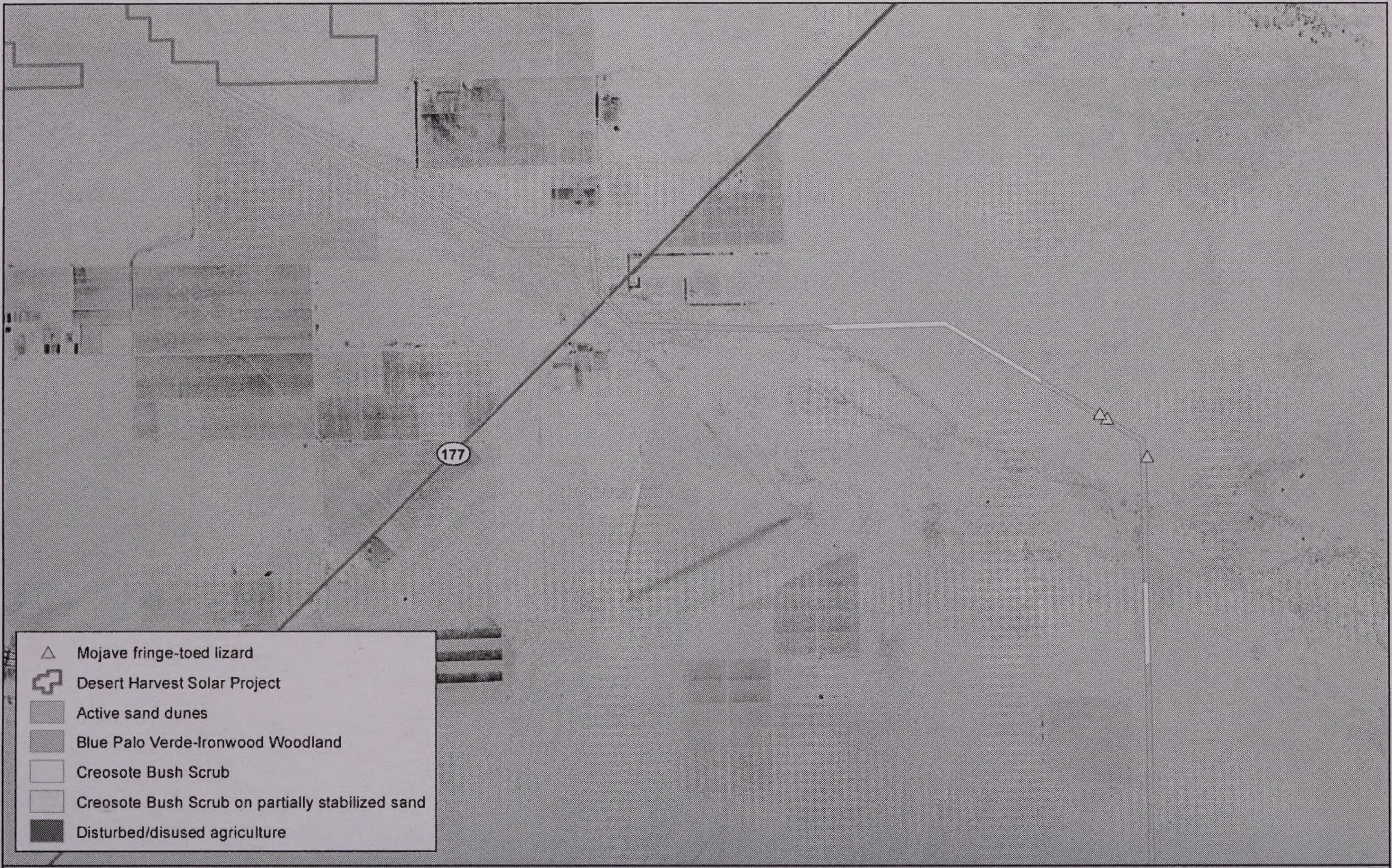
Figure 7

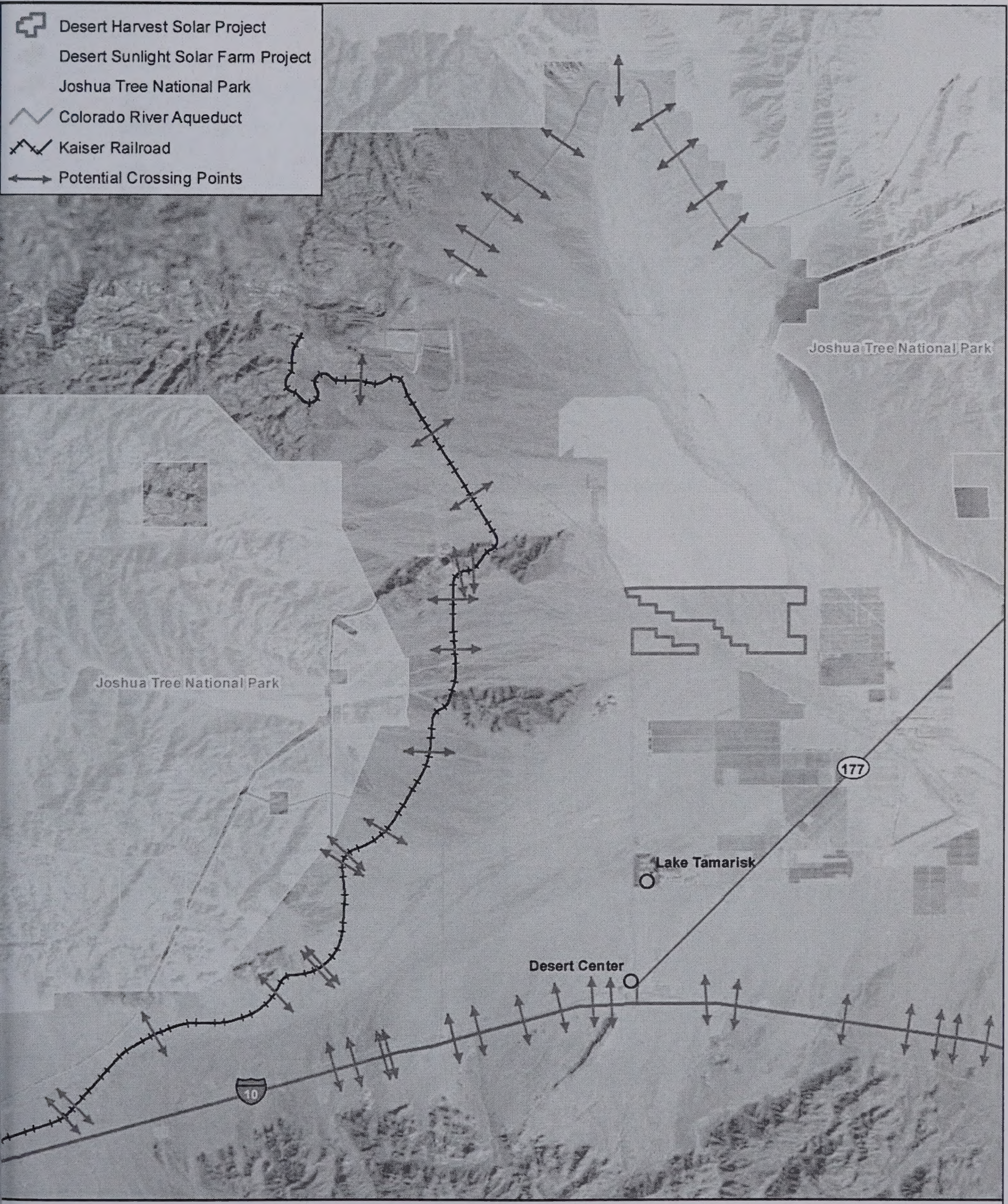
Special Status Wildlife Locations: DHSP site


177
△ Mojave fringe-toed lizard
Desert Harvest Solar Project
Active sand dunes
Blue Palo Verde-Ironwood Woodland
Creosote Bush Scrub
Creosote Bush Scrub on partially stabilized sand
Disturbed/disused agriculture
0
2,000
4,000
8,000
Feet
N

Aspen Environmental Group amec

Figure 8

Special Status Wildlife Locations: Gen-tie Line Alignments


Desert Harvest Solar Project
Desert Sunlight Solar Farm Project
Joshua Tree National Park
Colorado River Aqueduct
Kaiser Railroad
Potential Crossing Points
Joshua Tree National Park
Joshua Tree National Park
177
Lake Tamarisk
Desert Center
10
0
2
4
Miles
N

Aspen Environmental Group

amec

Figure 9
Wildlife Habitat Connectivity

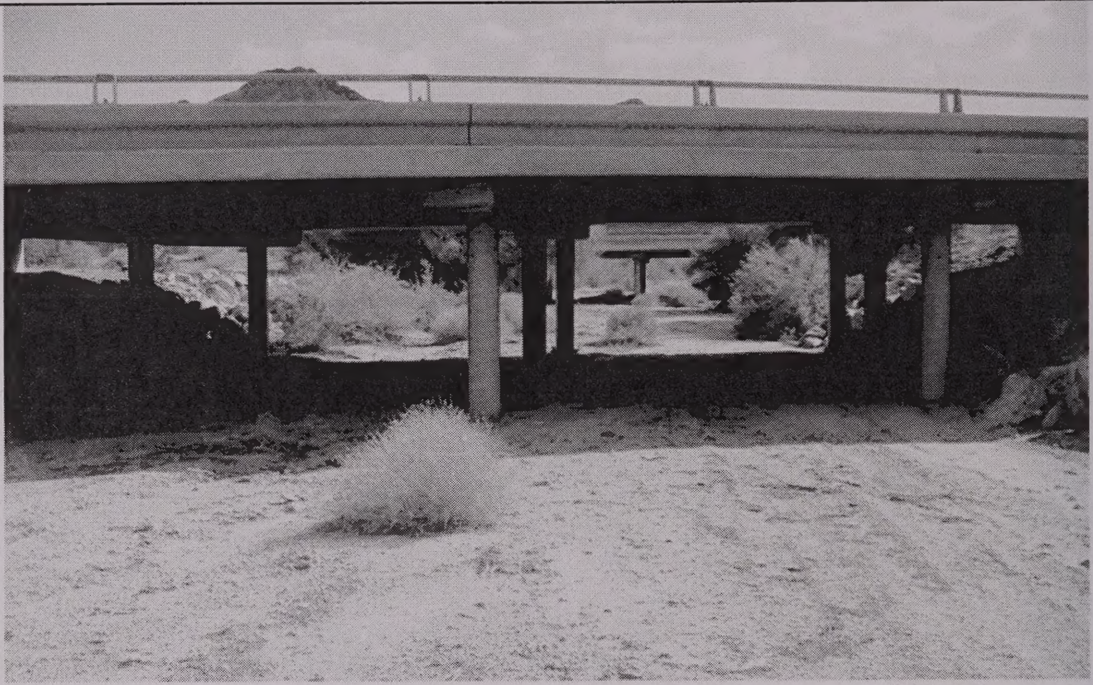


Photo 1. Typical Example of Interstate 10 stream crossing with even grade.

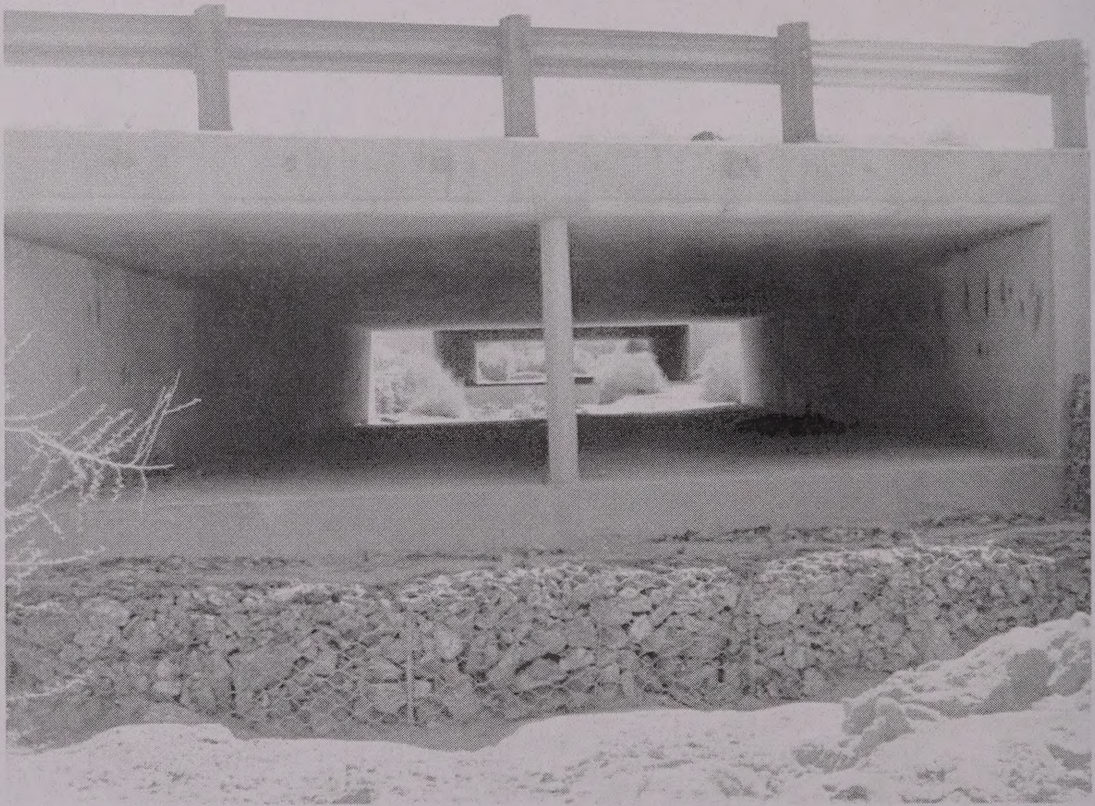


Photo 2. Typical example of Interstate 10 box culvert crossing, with uneven grade and rock armoring downstream side of each culvert.

Photo Exhibit

Interstate-10 Wildlife Crossing Sites

Appendix C.7

Winter Golden Eagle Survey Report

WINTER GOLDEN EAGLE SURVEY REPORT FOR THE PROPOSED DESERT HARVEST SOLAR PROJECT LOCATED IN UNINCORPORATED RIVERSIDE COUNTY, CALIFORNIA

Prepared for:

Aspen Environmental Group
201 North First Ave., Suite 102
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Contact: Scott D. White

Prepared by:

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Santa Ana, California 92705

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(213) 304-1826

March 2012

Bloom Biological, Inc.
Research | Consulting | Conservation

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Appendices

Appendix A. Faunal Compendium .... End of Document

1.0 INTRODUCTION

Bloom Biological, Incorporated (BBI) was retained by Aspen Environmental Group (Aspen) to conduct winter surveys for Golden Eagle (*Aquila chrysaetos*) for the proposed Desert Harvest Solar Project (project site) located in unincorporated Riverside County, California. The Golden Eagle is an uncommon permanent resident and migrant throughout most of California's foothills, mountains, sage-juniper flats and deserts (CDFG 2008), and is protected under the federal Bald and Golden Eagle Protection Act and by the California Department of Fish & Game as a Fully Protected Species. Golden Eagle status studies completed as recently as 1989 suggested a stable population for much of the western United States (Harlow and Bloom 1989); however, recent evidence suggests that eagle numbers in the western United States are now declining. As a result, the U.S. Fish and Wildlife Service (Service) is recommending focused surveys in nesting habitat within ten miles of proposed projects that might cause anthropogenic disturbances to eagles. Future recommendations regarding Golden Eagle wintering and migratory habitat use are being developed.

The winter survey described in this report will assist BBI and Aspen in further developing impact avoidance and management guidelines for this species in the project area. This report discusses BBI's survey methods, results and recommendations.

2.0 STUDY AREA DESCRIPTION

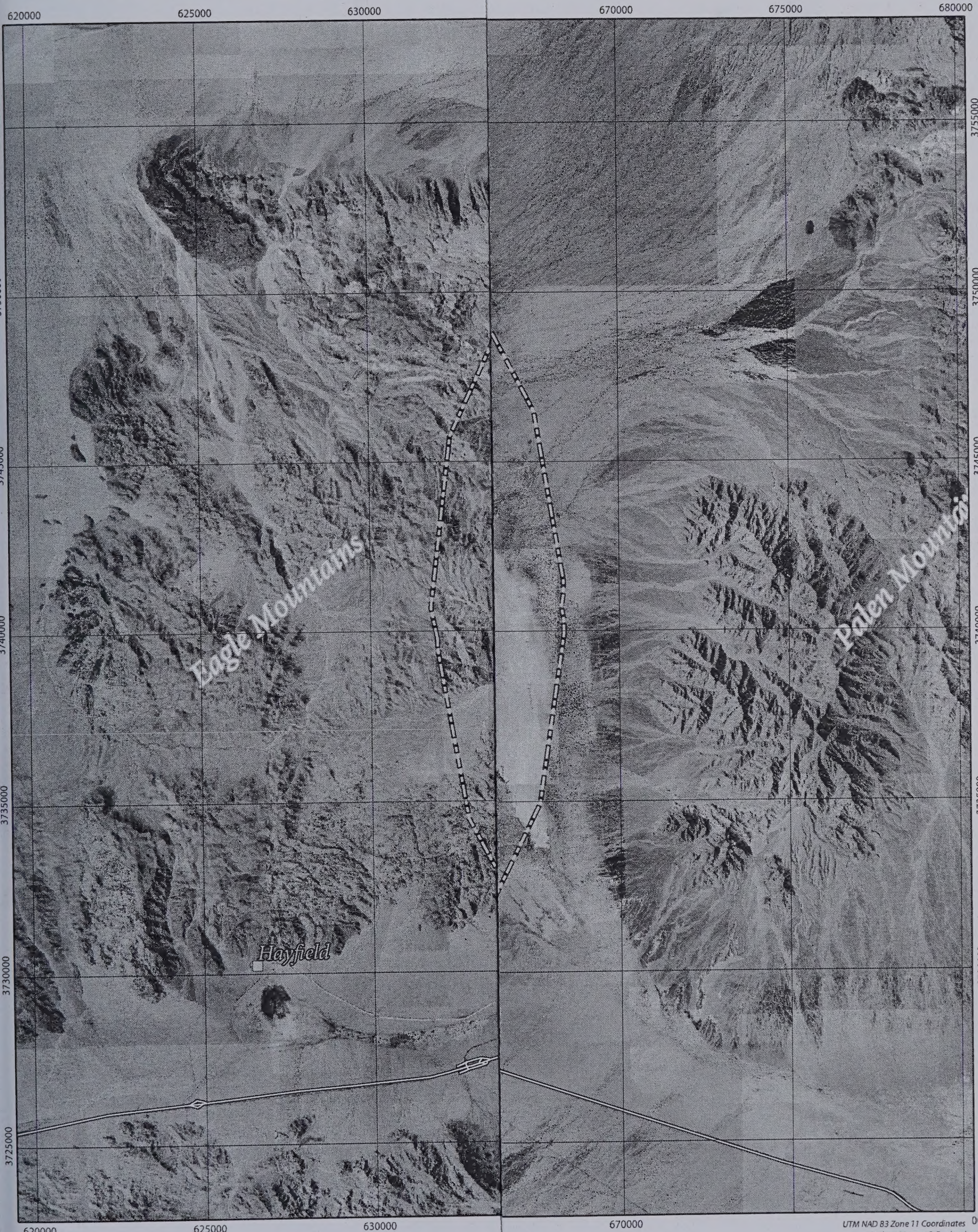
The project site is comprised of approximately 1,205 acres (488 hectares) of open desert in east-central Riverside County, California (see Figure 1). The site is located on all or portions of Public Land Survey Sections 26 and 27 of Township 4 South, Range 15 East of the US Geological Survey's (USGS) 7.5-minute *Victory Pass* quadrangle and Section 25 of Township 4 South, Range 15 East of the *East of Victory Pass* quadrangle. Terrain on the site is flat, with elevations ranging from 584 to 675 feet (178 to 206 meters) above mean sea level (amsl), with a mean elevation of 623 feet (190 meters) amsl.[1] The project site is accessed via County Route R2, which heads north from Desert Center – Rice Road just north of Interstate 10.

The study area for this survey includes the project site and all lands within a ten mile radius of the project site (Exhibits 1 and 2). For the purpose of this document, this region will be referred to as the "study area". The study area is comprised of approximately 247,160 acres (100,022 hectares) located on all or portions of the USGS 7.5-minute *Placer Canyon, Pinto Wells, Coxcomb Mountains, West of Palen Pass, Buzzard Spring, Victory Pass, East of Victory Pass, Palen Lake, Hayfield Spring, Desert Center, Corn Spring* and *Sidewinder Well* quadrangles. Terrain in the study area varies from flat to mountainous with elevations ranging from 423 to 3,983 feet (129 to 1,214 meters) amsl, with a mean elevation of 1,204 feet (367 meters) amsl[1]. Significant Holland (1986) land cover types in the study area are Agriculture, Alkali Playa, Blackbush Scrub, Desert Dry Wash Woodland, Mojave Creosote Bush Scrub, Mojave Mixed Woody Scrub, Mojavean Pinyon and Juniper Woodlands, Sonoran Creosote Bush Scrub and Sonoran Desert Mixed Scrub[2] (Exhibit 3). Potential locations for Golden Eagle nesting in the study area include the Eagle Mountains to the west, Coxcomb Mountains to the north, Palen Mountains to the east, and Chuckwalla Mountains to the south. Golden Eagles are also known to build nests on electrical towers, the majority of which run east-west in the southern end of the study area.

---

[1] Elevation values derived from GRASS GIS version 6.4 using module *r.univar* on a US Geological Survey 1/3-minute digital elevation model.

[2] Land cover types and extents based on GAP Analysis Project data and determined via a PostGIS/PostgresSQL spatial query.



Project Site Boundary

Ten Mile Golden Eagle Survey Buffer

0 1 2 3 mi

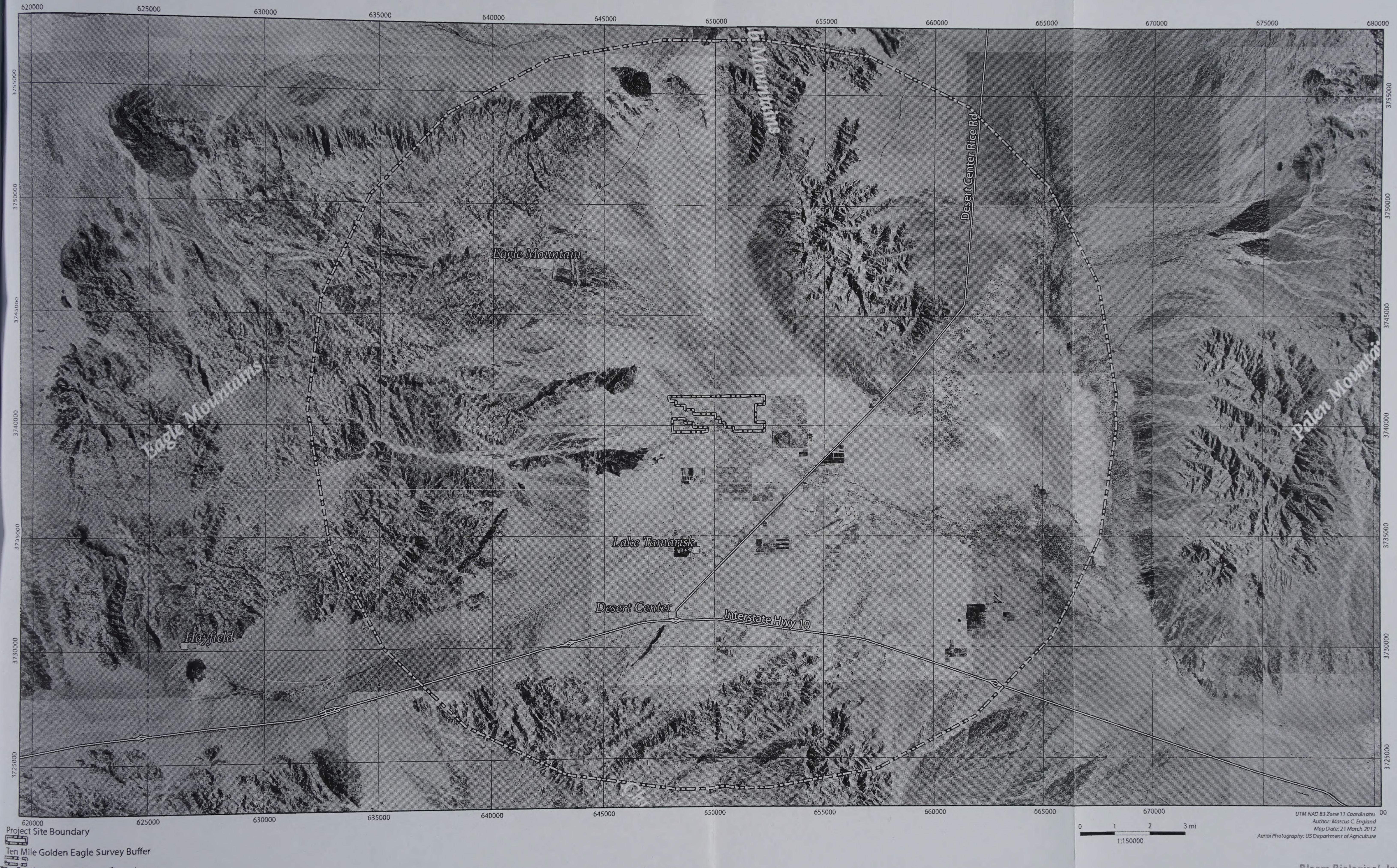
1:150000

UTM NAD 83 Zone 11 Coordinates
Author: Marcus C. England
Map Date: 21 March 2012
Aerial Photography: US Department of Agriculture

xhibit 1: Study Area

esert Harvest | Riverside County, California

Bloom Biological, Inc.
Research | Consulting Conservation



UTM NAD 83 Zone 11 Coordinates
Author: Marcus C. England
Map Date: 21 March 2012
Aerial Photography: US Department of Agriculture

Exhibit 1: Study Area

Desert Harvest | Riverside County, California

Bloom Biological, Inc.
Research | Consulting Conservation

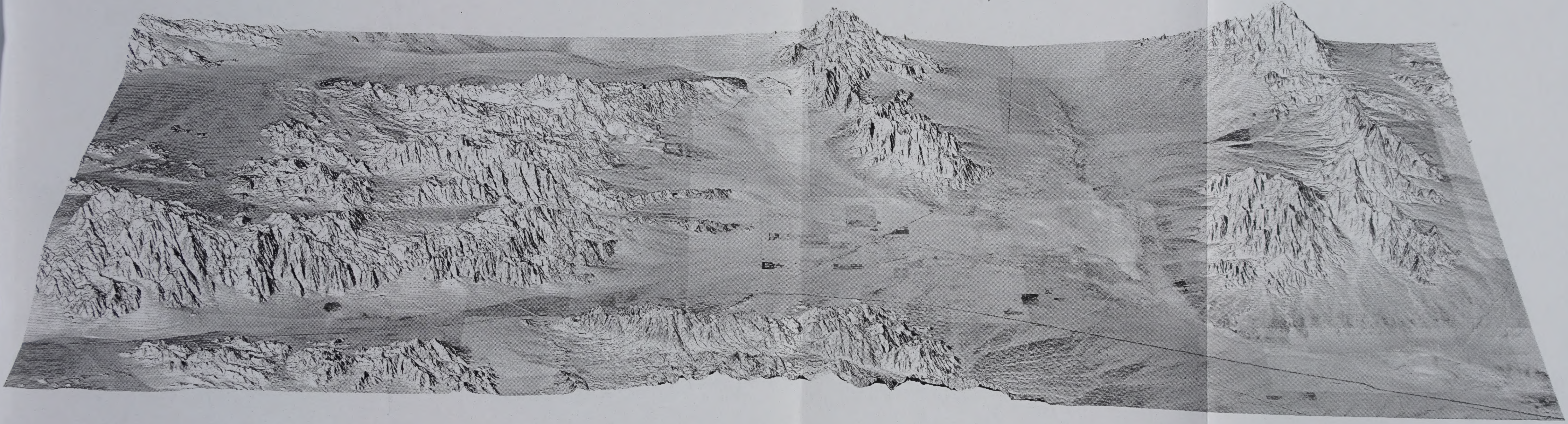
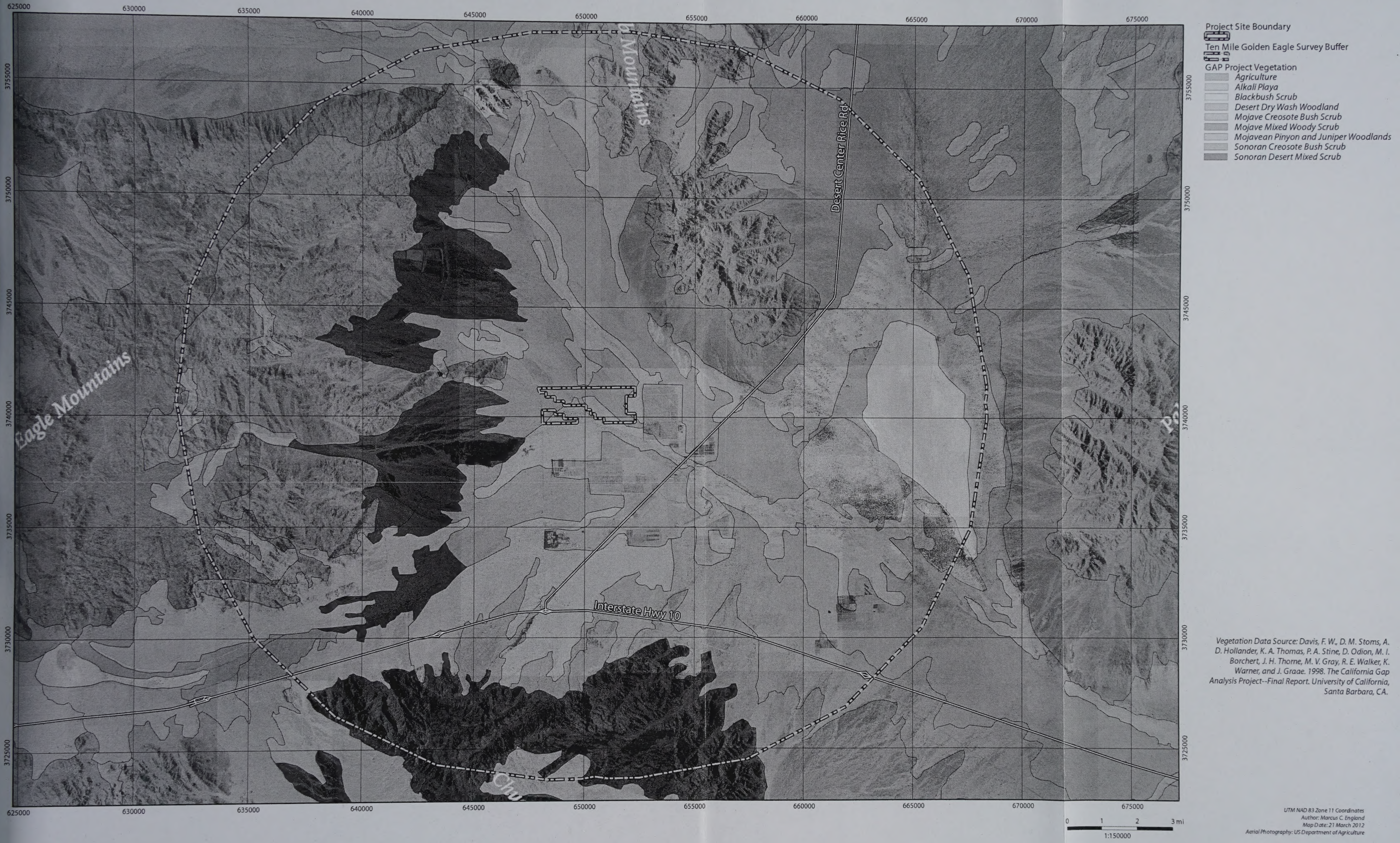


Exhibit 2: Terrain Features
Desert Harvest | Riverside County, California



Vegetation Data Source: Davis, F. W., D. M. Stoms, A. D. Hollander, K. A. Thomas, P. A. Stine, D. Odion, M. I. Borchert, J. H. Thorne, M. V. Gray, R. E. Walker, K. Warner, and J. Graae. 1998. The California Gap Analysis Project--Final Report. University of California, Santa Barbara, CA.

UTM NAD 83 Zone 11 Coordinates
Author: Marcus C. England
Map Date: 21 March 2012
Aerial Photography: US Department of Agriculture

Exhibit 3: GAP Vegetation Communities

Desert Harvest | Riverside County, California

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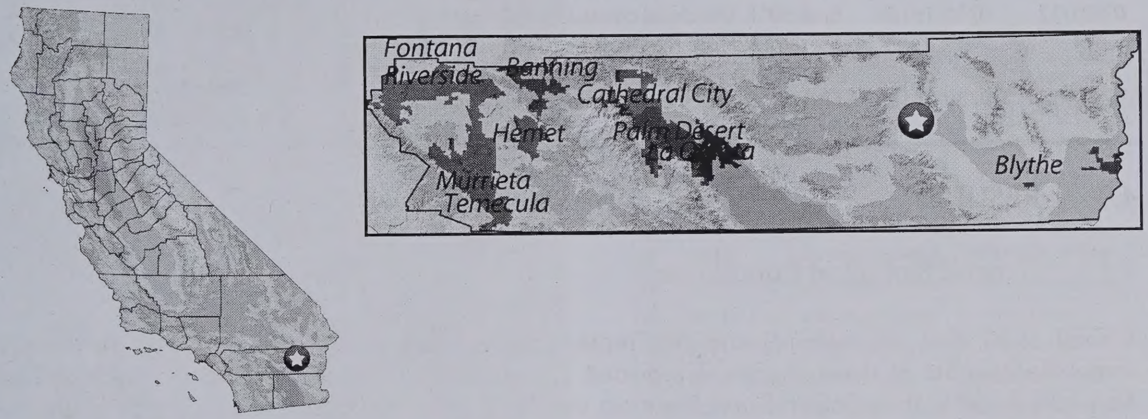
Research | Consulting Conservation

Figure 1. Project Site Location



3.0 METHODS

BBI biologists conducted eight surveys from December 22, 2011 to February 7, 2012. The primary objective of the surveys was to document the locations, if any, of Golden Eagles and Golden Eagle nests observed in the study area. The secondary objective was to document the location of other raptor and corvid nests. BBI biologists documented all other biological resources of potential permitting significance. Surveys were generally completed from sunrise to mid-afternoon or near sunset. Weather conditions varied throughout but were generally seasonable with no rain or other significant weather events that could adversely affect observations. Much of the study area was covered via vehicle on both improved and unimproved roads. Foot travel was necessary for close inspection of nests and viewing of terrain when a vehicle approach did not allow an appropriate vantage point. All findings of biological significance (e.g., nests, sensitive species) were documented with a GPS waypoint and photograph where feasible.

Table 1. Field Survey Dates, Times and Weather Conditions

Date	Time	Weather	Biologists
12/22/11	0830-1610h	Start: 48° F, 0% cloud cover, Strong Wind out of the N End: 50° F, 0% cloud cover, Strong Wind out of the N No rain; No fog; No snow	Peter H. Bloom Marcus C. England
12/28/11	0700-1630h	Start: 55° F, 1-25% cloud cover, Calm out of the W End: 66° F, 1-25% cloud cover, Light Wind out of the W No rain; No fog; No snow	Peter H. Bloom Ryan Thomas
01/06/12	0715-1545h	Start: 46° F, 1-25% cloud cover, Calm out of the N End: 72° F, 0% cloud cover, Calm out of the N No rain; No fog; No snow	Peter H. Bloom Karly Moore
01/10/12	0715-1615h	Start: 37° F, 1-25% cloud cover, Breeze out of the SE End: 65° F, 26-50% cloud cover, Breeze out of the NE No rain; No fog; No snow	Peter H. Bloom Karly Moore
01/20/12	0730-1615h	Start: 49.9° F, 76-99% cloud cover, Breeze out of the NE End: 70° F, 26-50% cloud cover, Breeze out of the E No rain; No fog; No snow	Lee Aulman Karly Moore
01/27/12	0745-1615h	Start: 64.9° F, 76-99% cloud cover, Strong Wind out of the NW End: 70° F, 76-99% cloud cover, Strong Wind out of	Lee Aulman Karly Moore

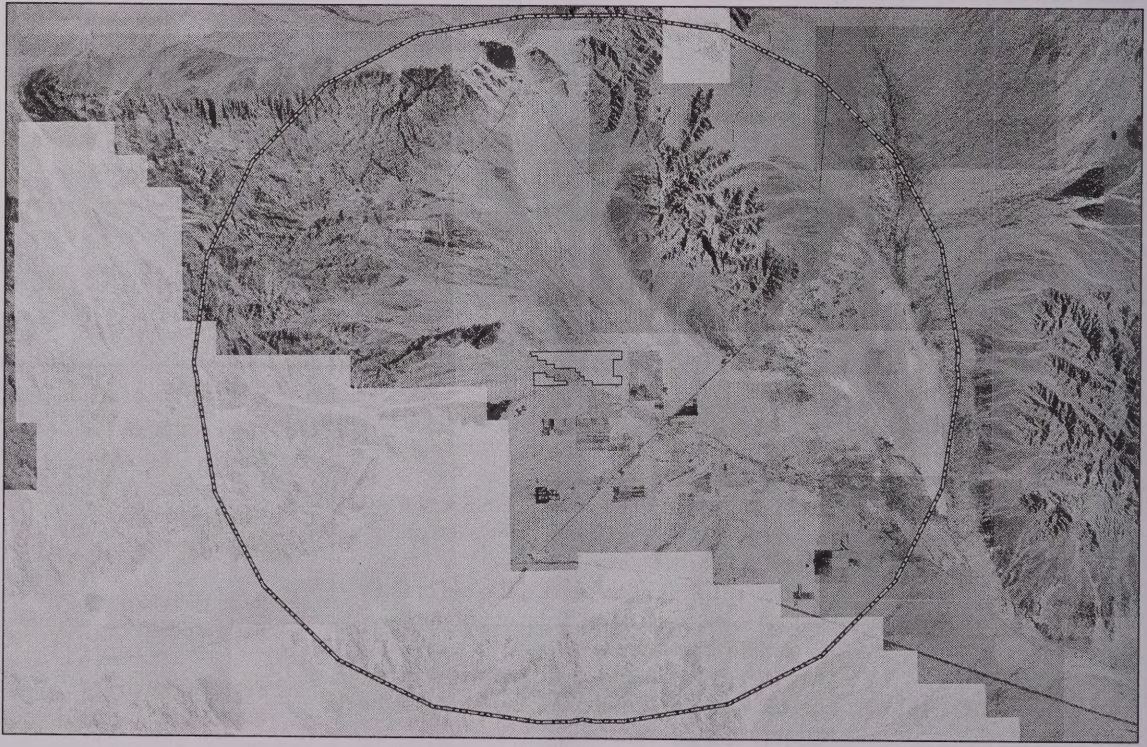
Date	Time	Weather	Biologists
		the NE No rain; No fog; No snow	
02/01/12	0715-1615h	Start: 53° F, 26-50% cloud cover, Breeze out of the W End: 69° F, 0% cloud cover, Light Wind out of the SW No rain; No fog; No snow	Peter H. Bloom Karly Moore
02/07/12	0730-1530h	Start: 54° F, 100% cloud cover, Breeze out of the E End: 67° F, 100% cloud cover, Breeze out of the W No rain; No fog; No snow	Peter H. Bloom Karly Moore

4.0 RESULTS

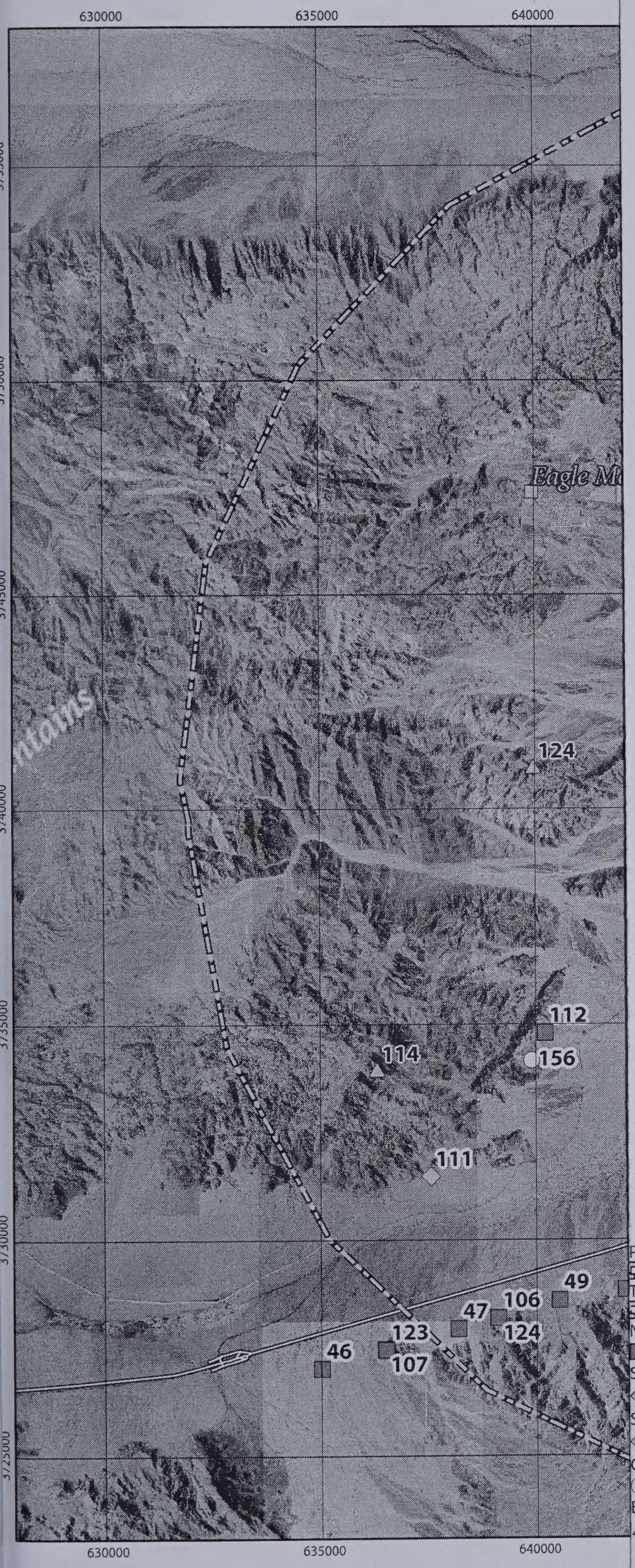
4.1 General Biological Conditions

A total of 41 bird, six mammal and two reptile species were observed during BBI's surveys. A comprehensive list of these species is provided in the Faunal Compendium which is attached as Appendix A. Other than Golden Eagle, the most significant resource observation during BBI's surveys was that of a shell fragment of a juvenile or immature Desert Tortoise (*Gopherus agassizii*) near the southwest edge of the study area on January 20, 2012 (point 111, Exhibit 4). The Desert Tortoise is listed as Threatened with Critical Habitat designated under the Federal Endangered Species Act. The project site is located approximately 1.25 miles northeast of the limits of the Chuckwalla Unit of Desert Tortoise Critical Habitat (Service 1994, Figure 2).

Figure 2. Desert Tortoise Critical Habitat Relative to the Project Site and Study area.



Probable migratory corridors, at least for Turkey Vultures (*Cathartes aura*), were detected in the west end of the study area (points 155 and 156, Exhibit 4) by BBI on February 1, 2012. In BBI's project database, biologist Karly Moore noted:



Sensitive Birds

#	Date	Common Name	Scientific Name
108	2012-01-10	Golden Eagle	Aquila chrysaetos

Sensitive Reptiles

#	Date	Common Name	Scientific Name
111	2012-01-20	Desert Tortoise	Gopherus agassizii

Other

#	Date	Title
155	2012-02-01	Migrating corridor

Nests

#	Date	Common Name	Scientific Name	Substrate	Height
46	2011-12-22	Red-tailed Hawk	Buteo jamaicensis	Utility Pole	150
47	2011-12-22	Common Raven	Corvus corax	Utility Pole	150
49	2011-12-22	Common Raven	Corvus corax	Utility Pole	150
50	2011-12-22	Golden Eagle	Aquila chrysaetos	Utility Pole	150
105	2012-01-10	Red-tailed Hawk	Buteo jamaicensis	Utility Pole	30
106	2012-01-10	Golden Eagle	Aquila chrysaetos	Utility Pole	60
107	2012-01-10	Golden Eagle	Aquila chrysaetos	Utility Pole	60
112	2012-01-20	Golden Eagle	Aquila chrysaetos	Other	10 feet
123	2012-01-27	Golden Eagle	Aquila chrysaetos	Utility Pole	90 ft
55	2011-12-22	Common Raven	Corvus corax	Utility Pole	150
57	2011-12-22	Common Raven	Corvus corax	Utility Pole	150
60	2011-12-22	Red-tailed Hawk	Buteo jamaicensis	Utility Pole	100
124	2012-01-27	Golden Eagle	Aquila chrysaetos	Utility Pole	90 ft
125	2012-01-27	Golden Eagle	Aquila chrysaetos	Utility Pole	90 ft
126	2012-01-27	Golden Eagle	Aquila chrysaetos	Utility Pole	90 ft
127	2012-01-27	Golden Eagle	Aquila chrysaetos	Utility Pole	90 ft

Project Site Boundary

Ten Mile Golden Eagle Survey Buffer

Nests
■

Sensitive Birds
◇

Sensitive Reptiles
◇

Other
○

BLM-Provided Golden Eagle Nest Locations
△

0 1 2 3 mi

1:150000

UTM NAD 83 Zone 11 Coordinates
Author: Marcus C. England
Map Date: 29 March 2012
Aerial Photography: US Department of Agriculture

hibit 4: Biological Resource Observation

sert Harvest | Riverside County, California

Bloom Biological, Inc.
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Date	Time	Weather	Biologists
		the NE No rain; No fog; No snow	
02/01/12	0715-1615h	Start: 53° F, 26-50% cloud cover, Breeze out of the W End: 69° F, 0% cloud cover, Light Wind out of the SW No rain; No fog; No snow	Peter H. Bloom Karly Moore
02/07/12	0730-1530h	Start: 54° F, 100% cloud cover, Breeze out of the E End: 67° F, 100% cloud cover, Breeze out of the W No rain; No fog; No snow	Peter H. Bloom Karly Moore

4.0 RESULTS

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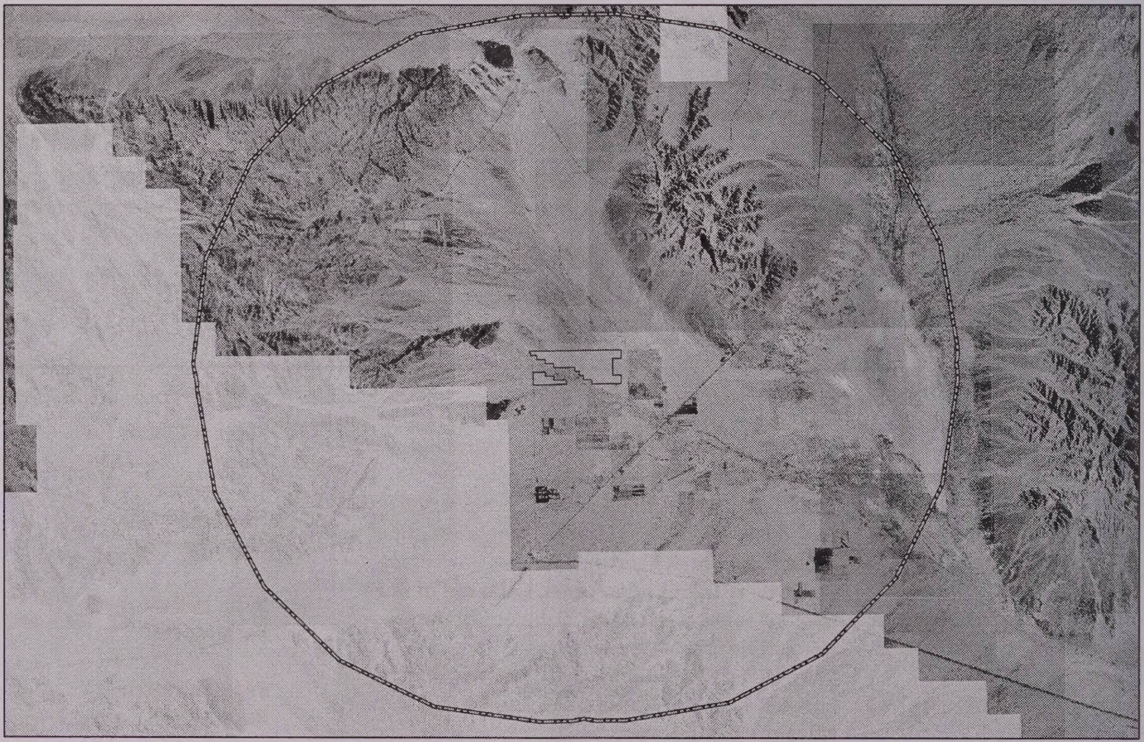
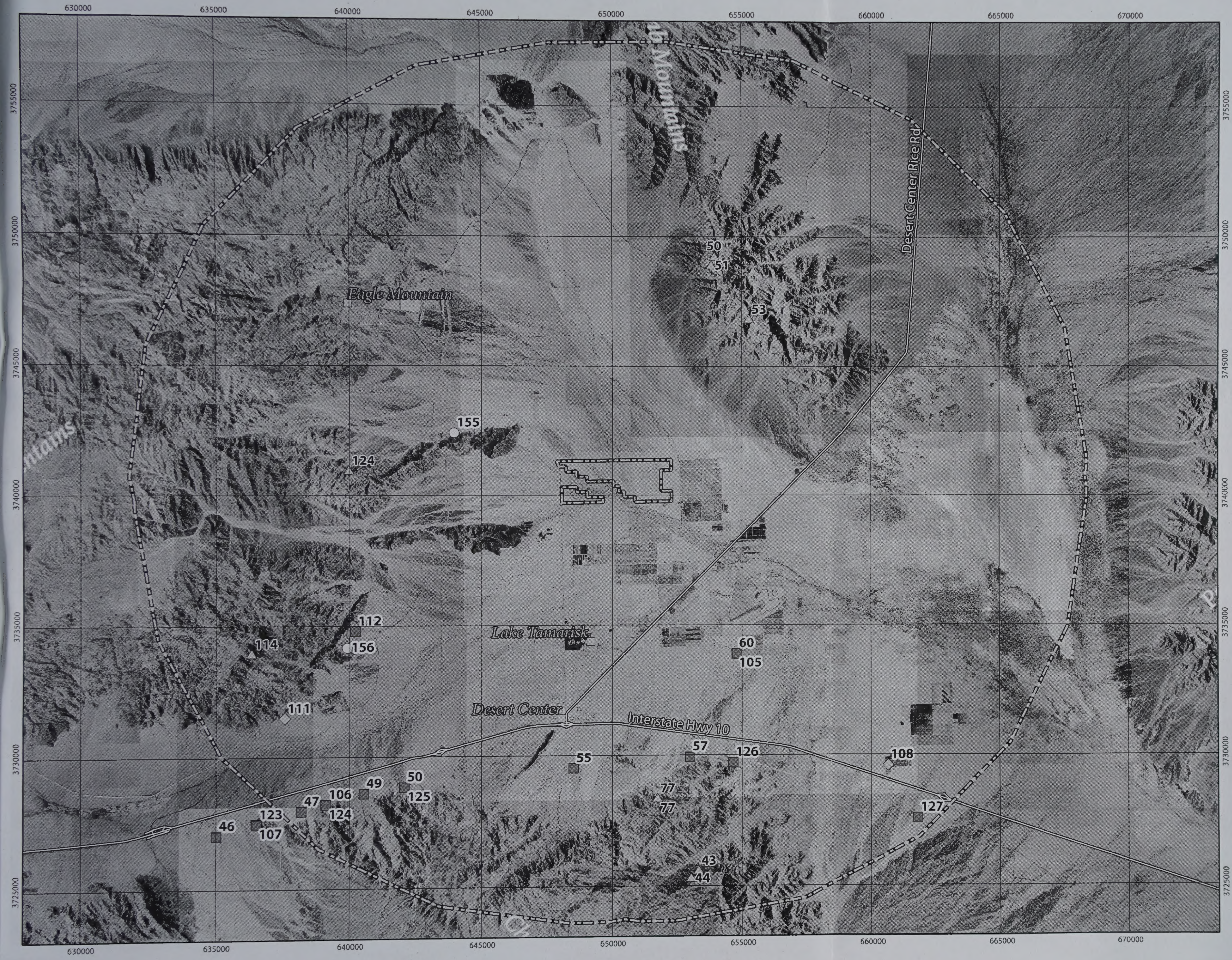
Figure 2. Desert Tortoise Critical Habitat Relative to the Project Site and Study area.



Probable migratory corridors, at least for Turkey Vultures (*Cathartes aura*), were detected in the west end of the study area (points 155 and 156, Exhibit 4) by BBI on February 1, 2012. In BBI's project database, biologist Karly Moore noted:

Exhibit 4: Biological Resource Observations

Desert Harvest | Riverside County, California



Sensitive Birds

#	Date	Common Name	Scientific Name
108	2012-01-10	Golden Eagle	Aquila chrysaetos

Sensitive Reptiles

#	Date	Common Name	Scientific Name
111	2012-01-20	Desert Tortoise	Gopherus agassizii

Other

#	Date	Title
155	2012-02-01	Migrating corridor

Nests

#	Date	Common Name	Scientific Name	Substrate	Height
46	2011-12-22	Red-tailed Hawk	Buteo jamaicensis	Utility Pole	150
47	2011-12-22	Common Raven	Corvus corax	Utility Pole	150
49	2011-12-22	Common Raven	Corvus corax	Utility Pole	150
50	2011-12-22	Golden Eagle	Aquila chrysaetos	Utility Pole	150
105	2012-01-10	Red-tailed Hawk	Buteo jamaicensis	Utility Pole	30
106	2012-01-10	Golden Eagle	Aquila chrysaetos	Utility Pole	60
107	2012-01-10	Golden Eagle	Aquila chrysaetos	Utility Pole	60
112	2012-01-20	Golden Eagle	Aquila chrysaetos	Other	10 feet
123	2012-01-27	Golden Eagle	Aquila chrysaetos	Utility Pole	90 ft
55	2011-12-22	Common Raven	Corvus corax	Utility Pole	150
57	2011-12-22	Common Raven	Corvus corax	Utility Pole	150
60	2011-12-22	Red-tailed Hawk	Buteo jamaicensis	Utility Pole	100
124	2012-01-27	Golden Eagle	Aquila chrysaetos	Utility Pole	90 ft
125	2012-01-27	Golden Eagle	Aquila chrysaetos	Utility Pole	90 ft
126	2012-01-27	Golden Eagle	Aquila chrysaetos	Utility Pole	90 ft
127	2012-01-27	Golden Eagle	Aquila chrysaetos	Utility Pole	90 ft

Project Site Boundary

Ten Mile Golden Eagle Survey Buffer

Nests
■

Sensitive Birds
◇

Sensitive Reptiles
◇

Other
○

BLM-Provided Golden Eagle Nest Locations
△

0 1 2 3 mi
1:150000

UTM NAD 83 Zone 11 Coordinates
Author: Marcus C. England
Map Date: 29 March 2012
Aerial Photography: US Department of Agriculture

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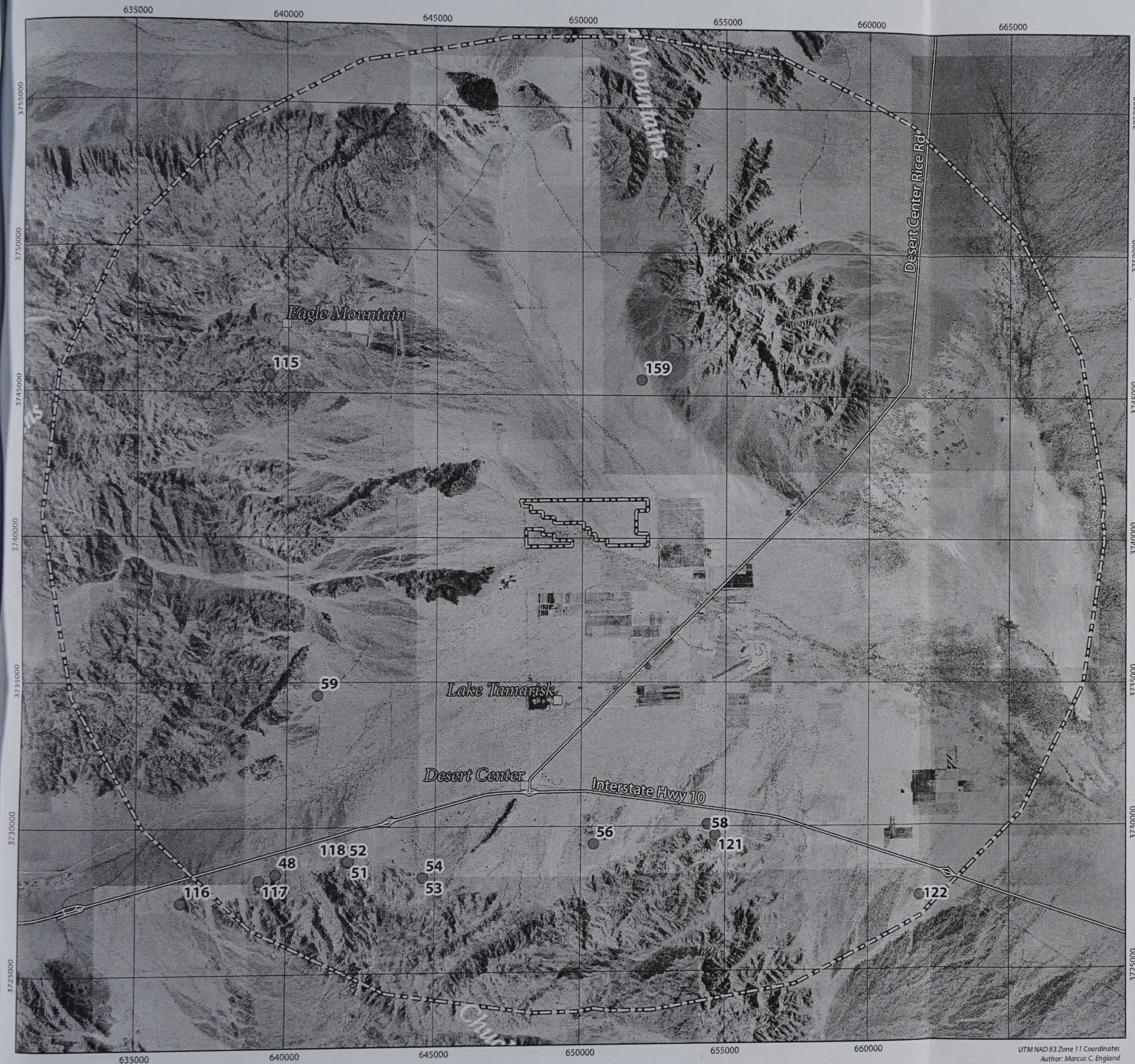


0 1 2 3 mi
1:150000

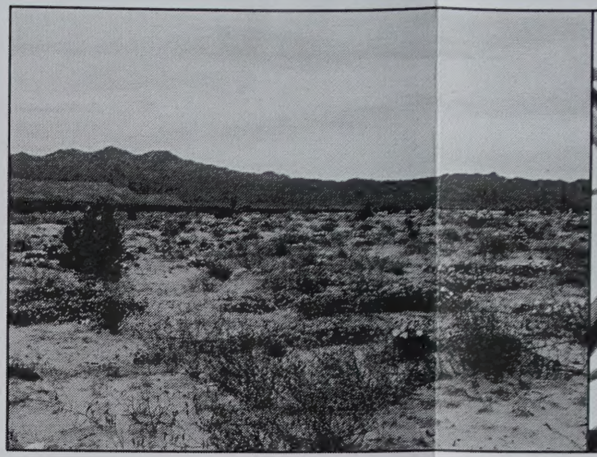
UTM NAD 83 Zone 11 Coordinates
Author: Marcus C. England
Map Date: 29 March 2012
Aerial Photography: US Department of Agriculture

Project Site Boundary

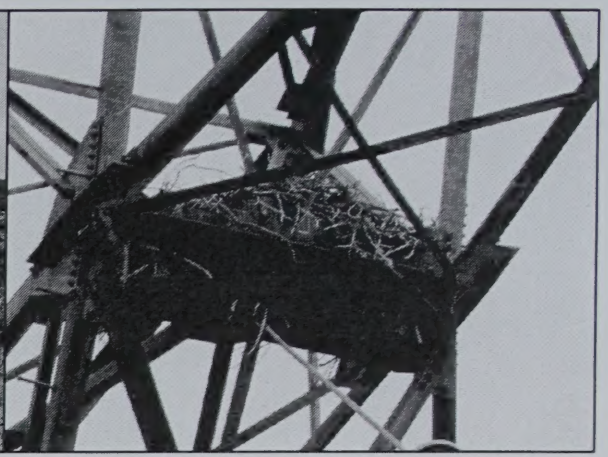
Ten Mile Golden Eagle Survey Buffer

xhibit 5: Photograph Locations

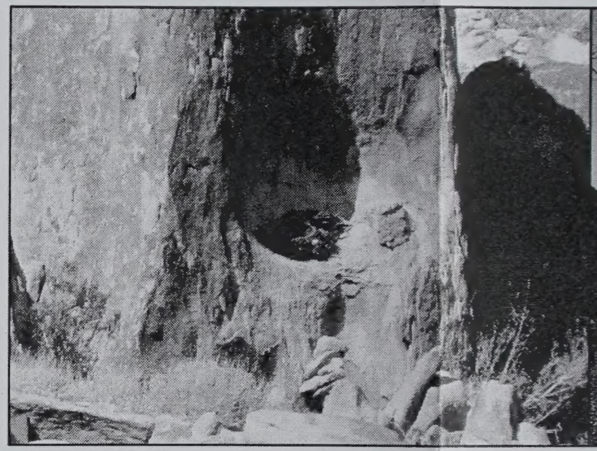
esert Harvest | Riverside County, California



Waypoint: 159
UTM Easting: 652049
UTM Northing: 3745555
Biologist: Karly Moore
Direction: NW
Description: Photo across the sand dune, north of highway 10, east of current solar farm being constructed.

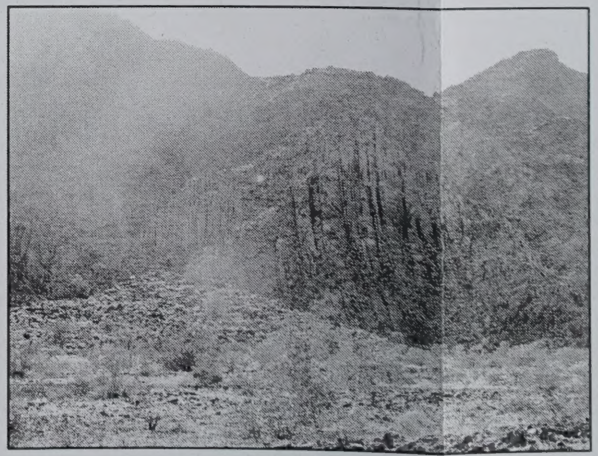


Waypoint: 118
UTM Easting:
UTM Northing:
Biologist: Karly Moore
Direction: N
Description: Golden eagle nest in a tower on the south side of Highway 10. Two unknown large birds of prey seen in the area.



Waypoint: 115
UTM Easting: 639364
UTM Northing: 3745631
Biologist: Karly Moore
Direction: NW
Description: Old, inactive probable Common Raven nest, stained with wood rat urine.

Waypoint: 48
UTM Easting: 639649
UTM Northing: 3728412
Biologist: Marcus C. England
Direction: W
Description: View of power line right of way.



Waypoint: 52
UTM Easting: 642005
UTM Northing: 3728813
Biologist: Marcus C. England
Direction: S
Description: Cliffs that could potentially provide nest locations for Golden Eagle.

Note: Additional photographs available upon request.

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> *Over the course of the day groups of turkey vultures were seen migrating WNW over Eagle Mountain. The first group of 80 turkey vultures were seen thermaling low below the ridgetop along the slope over by the aqueduct substation (643952, 3742418). This was the area the vultures were seen crossing a few weeks prior. Later in the day 136 turkey vultures were seen passing a little more to the west (639895, 3734170) traveling low and even into the draw/canyon by the old inactive golden eagle nest in the boulder.*

One California Species of Special Concern, a Long-eared Owl (*Asio otus*) was flushed from a wash on the south side of the study area on January 10, 2012.

A variety of large bird nests were also documented. These will be described in the following section.

4.2 Golden Eagles & Other Raptors

Golden Eagles are present in the area, but it is uncertain whether they are currently regularly using the proposed project's study area. On January 10, 2012, one adult Golden Eagle was observed soaring near the southeastern edge of the study area just north of Interstate 10 (point 108, Exhibit 4). The eagle was thermaling with approximately 80 Common Ravens (*Corvus corax*) and three Turkey Vultures. No other Golden Eagles were detected during BBI's surveys.

Eight Golden Eagle nests or probable Golden Eagle nests were detected by BBI during the surveys. All were located on utility poles. None of the nests appeared to be recently active. All of the nest locations identified by BBI are shown on Exhibit 4 and in Table 2 below. Eight additional Golden Eagle nest locations from 2010 were provided by the Bureau of Land Management. At least one of these nests was active in 2010. The nests are shown on Exhibit 4 and in Table 3 below.

Uncommon raptor species detected during the surveys include Prairie Falcon (*Falco mexicanus*) with three observed on January 20, 2012 and two observed on February 7, 2012, and the aforementioned Long-eared Owl observed on January 10, 2012. Common raptor species detected during BBI's surveys were Sharp-shinned Hawk (*Accipiter striatus*), Cooper's Hawk (*Accipiter cooperii*), Red-tailed Hawk (*Buteo jamaicensis*), and American Kestrel (*Falco sparverius*). Red-tailed Hawk was the only raptor species, other than Golden Eagle, for which nest locations were detected during BBI surveys. Nests were observed at points 46, 60, and 105 (Exhibit 4 and Table 2).

Table 2. Nest Locations & Descriptions

The following table shows all large bird nests detected during BBI's surveys. These nests are also depicted with their coordinates on Exhibit 4.

#	Date	Common Name	Scientific Name	Substrate	Height	Notes
46	2011-12-22	Red-tailed Hawk	*Buteo jamaicensis*	Utility Pole	150	South cross arm of tower.
47	2011-12-22	Common Raven	*Corvus corax*	Utility Pole	150	North arm of tower. Possible Red-tailed Hawk nest.
49	2011-12-22	Common Raven	*Corvus corax*	Utility Pole	150	North cross arm. Possibly Red-tailed Hawk.
50	2011-12-22	Golden Eagle	*Aquila chrysaetos*	Utility Pole	150	South of arm of utility tower.
55	2011-12-22	Common Raven	*Corvus corax*	Utility Pole	150	South cross arm. Could be Red-tailed Hawk or Golden Eagle.
57	2011-12-22	Common Raven	*Corvus corax*	Utility Pole	150	North arm. Possible Red-tailed Hawk nest.
60	2011-12-22	Red-tailed Hawk	*Buteo jamaicensis*	Utility Pole	100	None
105	2012-01-10	Red-tailed Hawk	*Buteo jamaicensis*	Utility Pole	30	Found 6 January 2012, female

#	Date	Common Name	Scientific Name	Substrate	Height	Notes
						was nest building.
106	2012-01-10	Golden Eagle	*Aquila chrysaetos*	Utility Pole	60	inactive, south side of Hwy 10, near hillside
107	2012-01-10	Golden Eagle	*Aquila chrysaetos*	Utility Pole	60	inactive, near hillside, south side of Hwy 10.
112	2012-01-20	Common Raven	*Corvus corax*	Other	10	Inactive, old nest, sticks stained with wood rat urine. Nest waypoint is a projected waypoint.
123	2012-01-27	Golden Eagle	*Aquila chrysaetos*	Utility Pole	90	Golden eagle nest, south side of highway 10, west end of driving route (closest to red canyon rd).
124	2012-01-27	Golden Eagle	*Aquila chrysaetos*	Utility Pole	90	Golden eagle nest in a tower, south side of highway 10.
125	2012-01-27	Golden Eagle	*Aquila chrysaetos*	Utility Pole	90	Golden eagle nest in tower, on south side of highway 10. Two large unidentified birds of prey were seen nearby.
126	2012-01-27	Golden Eagle	*Aquila chrysaetos*	Utility Pole	90	Golden eagle nest on south side of highway 10. There are DPV2 signs indicating ESA (possibly the nest). Location is roughly 2.5 miles southwest of the golden eagle seen several weeks prior.
127	2012-01-27	Golden Eagle	*Aquila chrysaetos*	Utility Pole	90	Golden eagle nest on a tower on the south side of Highway 10, furthest to the east documented. This nest is 1.5 miles southeast of where the golden eagle was documented several weeks prior.

Table 3. BLM-Provided Golden Eagle Nest Locations

The following table shows Golden Eagle nest locations within the study area provided by the Bureau of Land Management. These nests are also depicted on Exhibit 4.

Waypoint	Active	Elevation	Notes	Easting	Northing	Year
43	N	2358 ft	very old and deteriorated	_	_	2010
44	N	2374 ft		_	_	2010
77	*	1730 ft	*Possibly active	_	_	2010
114	N	3816 ft		_	_	2010
124	*	2878 ft	*Possibly active, possibly new material	_	_	2010
50	Y	2709 ft		_	_	2010
51	N	2175 ft		_	_	2010
53	N	2346 ft		_	_	2010

5.0 CONCLUSIONS & DISCUSSION

While there is currently an effort to build a larger “sustainable” energy infrastructure in the United States and abroad with expected fewer overall environmental effects than the existing hydrocarbon-based infrastructure, conservation biologists are still in the process of establishing what effects alternative energy plants might have on the environment at the local level. It is well-established that Golden Eagles and other raptors are vulnerable to mortality through collision with wind turbines (Orloff and Flannery 1992, PBRG 1997, Madders and Walker 2002). For solar facilities, potential effects on wildlife are in the early stages of investigation, but it is expected that raptors and other species could suffer adverse effects due to reduced foraging habitat, and potentially, a reduction in the prey base also caused by habitat loss for prey species. Specifically, BBI has identified the following potential adverse effects on Golden Eagles attributed to solar projects:

- **Direct Mortality** - Long-term surveys of Golden Eagle populations have shown declines in nesting populations throughout the western United States (Kochert and Steenhof 2002). Franson et al. (1995) found that humans cause >70% of recorded deaths, with the leading causes being accidental trauma (collisions with vehicles, power lines, or other structures, 27%), electrocution (25%), gunshot (15%), and poisoning (6%). Lead poisoning in California has also been identified as an important mortality factor with > 30% of a population having elevated levels (Bloom et al. 1989, Pattee et al. 1990).

  Electrocution is a particular risk potentially posed by infrastructure associated with many solar projects. Golden Eagles are vulnerable to electrocution when landing on power poles, with the risk increasing when inclement weather hampers flight or when wet feathers increase conductivity (Avian Power Line Interaction Committee 1996). Harness and Wilson (2001) reported that ≥272 Golden Eagle electrocution deaths occurred in western North America from 1986 to 1996. Poles with cross arms diagonal or parallel to prevailing winds are most lethal (Benson 1981, Harness and Wilson 2001).

  For this proposed project, the specifics of the proposed electrical infrastructure are unknown to BBI at this time. BBI recommends that electrocution risk be minimized through the use of bird-safe pole designs.

- **Nest Failures** - Golden Eagles may desert nests in early incubation if disturbed by humans (Thelander 1974), and potential desertion may not be noticed early through behavioral cues as Golden Eagles are not aggressive toward humans in the nest vicinity and will simply leave and not return to the area for hours (Camenzind 1969), if ever. While data collected in this survey suggest that the proposed project is unlikely to cause such an effect directly, project implementation could contribute to cumulative or growth-inducing impacts, ultimately causing additional anthropogenic disturbance in the area over time.

- **Indirect Mortality** – Management of healthy eagle populations requires maintaining prey habitat in foraging areas (Kochert et al. 2002), as the availability of food and nesting sites is the primary factor determining nesting density of Golden Eagles (Hunt et al. 1995), and reproductive rates of Golden Eagles often fluctuate with prey densities (Smith and Murphy 1979, Tjernberg 1983, Bates and Moretti 1994, Steenhof et al. 1997, McIntyre and Adams 1999). In southwestern Idaho, Marzluff et al. (1997) have found that behavior and demography of Golden Eagles are closely associated with the abundance of Black-tailed Jackrabbits (*Lepus californicus*), which are themselves dependent on stands of sagebrush/rabbitbrush interspersed with grassland (Knick and Dyer 1997). Bloom and Hawks (1982), working in the Great Basin Desert of northeast California and northwest Nevada, found that 91% of the biomass and 85% of the frequency of prey found in nests were attributed to lagomorphs. Patch sizes of this habitat were found to be an essential feature of Golden Eagle home ranges (Marzluff et al. 1997).

  In the study area for this proposed project, BBI biologists stated that there was "a notable absence of prey items on the site". Indeed, Black-tailed Jackrabbits were only observed in small numbers during the surveys, with one on January 6, two on January 10, one on January 20 and three on February 1, 2012. While Golden Eagles are capable of killing large prey such as cranes, wild ungulates, and domestic livestock, smaller game such as rabbits, hares, ground squirrels, and prairie dogs are most important (Bloom and Hawks 1982, Olendorff 1976). As jackrabbit population levels are cyclical, it is unclear if the relatively low number of jackrabbits detected during the surveys were an indication of poor habitat quality or reflect numbers indicative of the low end of population fluctuation.

Golden Eagles typically reach sexual maturity, form territories and begin nesting at four years of age. Pairs generally stay within the limits of their territory, which can measure 20–30 square kilometers, and within that territory can have as many as 14 nests (Bloom pers. obs.) which a pair maintains and repairs as part of its courtship ritual. Over the course of a decade several of these nests will be used and will produce young, others may only be maintained with the periodic addition of fresh sticks. Most alternate nests are important in the successful reproduction of a pair of eagles. Pairs commonly refrain from laying eggs in some years, particularly when prey is scarce.

Given the presence of Golden Eagles and at least eight confirmed or probable Golden Eagle nests in the study area, but the lack of any indication of recent nest activity, it is the opinion of BBI that although Golden Eagles are present in the study area, they may not have recently nested within it because of low prey levels. BBI recommends that winter and springs surveys for Golden Eagle be conducted yearly until project construction is completed.

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APPENDIX A. FAUNAL COMPENDIUM

Birds

Anseriformes - Screamers, Swans, Geese, and Ducks | Anatidae - Ducks, Geese, and Swans
    Canada Goose *Branta canadensis*

Galliformes - Gallinaceous Birds | Odontophoridae - New World Quail
    Mountain Quail *Oreortyx pictus*
    Gambel's Quail *Callipepla gambelii*

Pelecaniformes - Pelicans, Herons, Ibises, and Allies | Ardeidae - Herons, Bitterns, and Allies
    Great Egret *Ardea alba*

Accipitriformes - Hawks, Kites, Eagles, and Allies | Cathartidae - New World Vultures
    Turkey Vulture *Cathartes aura*

Accipitriformes - Hawks, Kites, Eagles, and Allies | Accipitridae - Hawks, Kites, Eagles, and Allies
    Sharp-shinned Hawk *Accipiter striatus*
    Cooper's Hawk *Accipiter cooperii*
    Red-tailed Hawk *Buteo jamaicensis*
    Golden Eagle *Aquila chrysaetos*

Falconiformes - Caracaras and Falcons | Falconidae - Caracaras and Falcons
    American Kestrel *Falco sparverius*
    Prairie Falcon *Falco mexicanus*

Gruiformes - Rails, Cranes, and Allies | Rallidae - Rails, Gallinules, and Coots
    American Coot *Fulica americana*

Columbiformes - Pigeons, and Doves | Columbidae - Pigeons and Doves
    Eurasian Collared-Dove *Streptopelia decaocto*
    Mourning Dove *Zenaida macroura*

Cuculiformes - Cuckoos and Allies | Cuculidae - Cuckoos, Roadrunners, and Anis
    Greater Roadrunner *Geococcyx californianus*

Strigiformes - Owls | Strigidae - Typical Owls
    Long-eared Owl *Asio otus*

Apodiformes - Swifts, and Hummingbirds | Apodidae - Swifts
    White-throated Swift *Aeronautes saxatalis*

Piciformes - Puffbirds, Jacamars, Toucans, Woodpeckers, and Allies | Picidae - Woodpeckers and Allies
    Ladder-backed Woodpecker *Picoides scalaris*

Passeriformes - Passerine Birds | Tyrannidae - Tyrant Flycatchers
    Black Phoebe *Sayornis nigricans*
    Say's Phoebe *Sayornis saya*

Passeriformes - Passerine Birds | Laniidae - Shrikes
    Loggerhead Shrike *Lanius ludovicianus*

Passeriformes - Passerine Birds | Corvidae - Crows and Jays
    Common Raven *Corvus corax*

Passeriformes - Passerine Birds | Alaudidae - Larks
    Horned Lark *Eremophila alpestris*

Passeriformes - Passerine Birds | Remizidae - Penduline Tits and Verdins
    Verdin *Auriparus flaviceps*

Passeriformes - Passerine Birds | Troglodytidae - Wrens
    Cactus Wren *Campylorhynchus brunneicapillus*
    Rock Wren *Salpinctes obsoletus*

Passeriformes - Passerine Birds | Polioptilidae - Gnatcatchers and Gnatwrens
    Blue-gray Gnatcatcher *Polioptila caerulea*
    Black-tailed Gnatcatcher *Polioptila melanura*

Passeriformes - Passerine Birds | Turdidae - Thrushes
    Western Bluebird *Sialia mexicana*
    Mountain Bluebird *Sialia currucoides*

Passeriformes - Passerine Birds | Mimidae - Mockingbirds and Thrashers
    Sage Thrasher *Oreoscoptes montanus*
    California Thrasher *Toxostoma redivivum*

Passeriformes - Passerine Birds | Sturnidae - Starlings
    European Starling *Sturnus vulgaris*

Passeriformes - Passerine Birds | Ptilogonatidae - Silky-flycatchers
    Phainopepla *Phainopepla nitens*

Passeriformes - Passerine Birds | Parulidae - Wood-Warblers
    Yellow-rumped Warbler *Setophaga coronata*

Passeriformes - Passerine Birds | Emberizidae – Emberizids
    Black-throated Sparrow *Amphispiza bilineata*
    White-crowned Sparrow *Zonotrichia leucophrys*

Passeriformes - Passerine Birds | Fringillidae - Fringilline and Cardueline Finches and Allies
    House Finch *Carpodacus mexicanus*
    Lesser Goldfinch *Spinus psaltria*

Passeriformes - Passerine Birds | Passeridae - Old World Sparrows
    House Sparrow *Passer domesticus*

Mammals

Lagomorpha | Leporidae
    Black-tailed Jackrabbit *Lepus californicus*

Rodentia | Sciuridae
    White-tailed Antelope Squirrel *Ammospermophilus leucurus*

Rodentia | Heteromyidae
- Desert Kangaroo Rat *Dipodomys deserti*
- Merriam's Kangaroo Rat *Dipodomys merriami*

Artiodactyla | Cervidae
- Mule Deer *Odocoileus hemionus*

Reptiles

Testudines | Testudinidae
- Desert Tortoise *Gopherus agassizii*

Squamata | Phrynosomatidae
- Side-blotched Lizard *Uta stansburiana*

Appendix C.8

Draft Desert Tortoise Translocation Plan

DRAFT Desert Tortoise Translocation Plan
Desert Harvest Solar Project

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Draft Report: April 2012

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ACRONYMS AND ABBREVIATIONS

Area of Critical Environmental Concern	ACEC
AMEC Earth & Environmental, Inc.	AMEC
Applicant	enXco Development Corporation
Biological Assessment	BA
Bureau of Land Management	BLM
Biological Opinion	BO
California Department of Fish and Game	CDFG
California Endangered Species Act	CESA
Critical Habitat Unit	CHU
Draft Environmental Impact Statement	DEIS
Desert Harvest Solar Project	DHSP
Desert Sunlight Solar Farm Project	DSSF
Desert Tortoise Conservation Center	DTCC
Desert Wildlife Management Area	DWMA
Environmental Impact Statement	EIS
enXco Development Corporation	enXco
Eagle Mountain Pumped Storage Project	EMPSP
Federal Endangered Species Act	ESA
Final Environmental Impact Statement	FEIS
Generator intertie transmission line	gen-tie
Incidental Take Permit	ITP
Kilometer (0.62 mi)	km
Joshua Tree National Park	JTNP
Megawatt	MW
Memorandum of Understanding	MOU
National Environmental Policy Act	NEPA
Desert Harvest Solar Project and associated generation intertie transmission line	Proposed action
Right-of-way	ROW
Upper respiratory tract disease	URTD
U.S. Fish and Wildlife Service	USFWS
Worker Environmental Awareness Program	WEAP

1. INTRODUCTION

enXco Development Corporation (enXco or Applicant) has applied to the Bureau of Land Management (BLM) for an issuance of a right-of-way (ROW) grant that would authorize construction, operation, maintenance, and decommission of the proposed Desert Harvest Solar Project (DHSP) and generator intertie (gen-tie) transmission line (together referred to as the proposed action). The proposed action is a commercial solar power-generating facility on over 1,200 acres of BLM-managed lands, and the gen-tie line would traverse 12.1 miles of both BLM-managed lands and private lands under the jurisdiction of Riverside County. enXco's objective for the DHSP is to construct and operate a 150 megawatt (MW) renewable energy resource. The DHSP has a minimum expected lifetime of 30 years, with an opportunity of 50 years or more with equipment replacement and repowering. The DHSP and several alternatives to the proposed action are currently under BLM review, pursuant to the National Environmental Policy Act (NEPA).

The proposed action area is located in Riverside County, in the upper Chuckwalla Valley approximately 5 miles north of the rural community of Desert Center (Figure 1, *Regional Location*; all figures are located at the end of this document). Joshua Tree National Park (JTNP) surrounds the upper Chuckwalla Valley on the north, east, and west. To the north, the JTNP boundary is about 7 miles from the northern boundary of the proposed solar field site. The Coxcomb Mountains, in the southeastern corner of JTNP, are located about 1.8 miles northeast of the northeastern corner of the site. To the west, the JTNP boundary is about 3.5 miles from the western boundary of the DHSP boundary at Kaiser Road.

Complete details of project locations and description are found in the *Desert Harvest Solar Project Draft EIS and CDCA Plan Amendment* (BLM 2011a), the *Biological Resources Technical Report, Desert Harvest Solar Project* (Aspen 2011), and in the *Biological Assessment*, *Desert Harvest Solar Project* (BLM 2011b).

The federally and state listed threatened desert tortoise (Gopherus agassizii) occurs in the project vicinity. No live desert tortoises or recent sign were observed on the DHSP site or adjacent areas during the 2010 and 2011 protocol-level field surveys (AMEC 2011a; 2011b). However, several desert tortoise burrows, designated as class 2 (good condition) and class 3 (deteriorated condition), and several disarticulated bone fragments, possibly originating from a desert tortoise, were located on the site. Active desert tortoises and sign were located on the adjacent Desert Sunlight Solar Farm (DSSF) site and on the gen-tie alignment proposed for DSSF and DHSP (Ironwood and Woodard 2011). The occurrence of tortoise sign, even where no living tortoises are found during surveys, indicates desert tortoise presence (US Fish and Wildlife Service; USFWS 2010a). Desert tortoises are found throughout the region and are mobile during their active seasons. Based on the presence of desert tortoises and active burrows on the adjacent project site and gen-tie alignments, the entire DHSP site and gen-tie alignment may be occupied by desert tortoises at any time, albeit only in low numbers. Take of desert tortoises requires authorization from the USFWS and California Department of Fish and Game (CDFG) under the federal and California Endangered Species Acts (ESA and CESA, respectively). This Translocation Plan describes enXco's proposed translocation methods and locations for any desert tortoises that may be found within the DHSP site prior to construction. This Plan has been prepared to support the BLM's consultation with USFWS under Section 7 of the federal ESA and state permitting under CESA.

The purposes of this Desert Tortoise Translocation Plan are to provide:

1. Estimates of the number of desert tortoises that may be present on the DHSP site;
2. Detailed descriptions of the methods to be used to translocate any tortoises present on the DHSP site at the time of project construction in order to avoid and minimize potential "take" of

desert tortoises during the construction, O&M, and decommissioning phases of the proposed action;

3. The details of the long-term monitoring and reporting program to track the effectiveness of the translocation effort.

This Translocation Plan builds on concepts and general translocation ideals with nearby solar projects, reviewed and approved by USFWS, CDFG, and BLM.

1.1 Draft Environmental Impact Statement and Biological Assessment

The Final DHSP Translocation Plan will conform to the following Applicant-Proposed Measure (**AM-BIO-6**) and to the requirements of (i) relevant provisions of the DHSP Project's Environmental Impact Statement, (ii) any USFWS Biological Opinion (BO) or CDFG Incidental Take Permit (ITP) issued for the DHSP Project, and (iii) any revisions to relevant mitigation measures that may be adopted in the BLM Record of Decision for the project.

AM-BIO-6 A **Draft Desert Tortoise Translocation Plan** will be prepared for the project and will be implemented by the Applicant to ensure that construction monitoring will be conducted by BLM-, USFWS-, and CDFG-approved biologists during all construction activities, and that any desert tortoise found with the construction zone will be translocated to a suitable location outside of the project footprint. The Final Plan will conform to the 2010 USFWS desert tortoise relocation guidelines entitled *Translocation of Desert Tortoise (Mojave Population) From Project Sites: Plan Development Guidance* (unpublished report dated August 2010).

1.2 Biological Opinion

To be completed upon issuance of the BO.

2. Estimated Number of Desert Tortoises

The DHSP site is within the Colorado Desert Recovery Unit as identified in the *Revised Recovery Plan for the Mojave Population of the Desert Tortoise* (USFWS 2011b). The Revised Recovery Plan is the most current document describing USFWS's strategy for desert tortoise recovery and reflects the most current understanding of desert tortoise biology. The Colorado Desert Recovery Unit as recognized in the Revised Recovery Plan comprises two recovery units recognized in the prior Recovery Plan (USFWS 1994) as the Eastern Colorado Desert and Northern Colorado Desert Recovery Units.

Reliable estimates of desert tortoise densities for the region surrounding the proposed action area are not available. Tortoise densities were estimated at approximately 6.9 animals per square kilometer, based on range-wide sampling data collected between 2001 and 2007 for the formerly recognized Eastern Colorado Recovery Unit (USFWS 2011b). However, these densities vary widely throughout the recovery unit. The USFWS has concluded that too few data are available to support a confident estimate of tortoise densities in the region, but that the ratio of carcasses to live animals found in recent range-wide sampling was low, which may indicate a relatively stable population. The current density estimate for the Colorado Desert Recovery Unit is 5.3 tortoises per square kilometer (USFWS 2011c).

Desert tortoise surveys were conducted on the DHSP site in 2010 and 2011 by AMEC Earth and Environmental (AMEC 2011a; 2011b) in accordance with the USFWS survey protocol *Preparing for any Action that may Occur within the Range of the Mojave Desert Tortoise* (USFWS 2010a). No live desert tortoises or recent sign were observed within the DHSP survey area. However, several desert tortoise burrows, designated as class 2 (good condition) and class 3 (deteriorated condition), and several disarticulated bone fragments possibly originating from a desert tortoise, were located in the larger northeastern parcel of the solar generator site, and eight possible desert tortoise burrows, designated as class 5 (possibly tortoise, good condition), were observed in the smaller southwestern parcel. One additional class 5, possible desert tortoise burrow, was also observed offsite, within the perimeter transects for the southwestern parcel. Figure 2, *Desert Tortoise Survey Results*, identifies the locations of desert tortoise sign encountered during desert tortoise surveys for the DHSP. None of the burrows or other sign observed in 2010 and 2011 exhibited any evidence of recent use or corroborating sign.

The nearest documented desert tortoise locations are on the DSSF site, north of the DHSP site (BLM 2011c). Tortoises and recent sign were found on the DSSF site, about 0.3 mile north of the DHSP site, and along the proposed gen-tie alignment for the proposed action (BLM 2011c and Figures 3 and 4). In addition, a road-killed desert tortoise was observed at the Eagle Mountain off ramp on east-bound Interstate 10, approximately 6.5 miles southwest of the DHSP site, by biologists en route to the DHSP site in 2010 (AMEC 2011a).

Desert tortoises are found throughout the region and are mobile during their active seasons. Based on the presence of desert tortoise sign on the DHSP site and on active desert tortoises on the adjacent DSSF site and associated gen-tie alignments, the entire DHSP site and all gen-tie alternative alignments may be occupied by desert tortoises at any time, albeit in low numbers.

The USFWS (2010a) provides a mathematical formula for estimating actual numbers of adult and sub-adult desert tortoises from field survey data. However, this formula is not applicable for the available field data for the proposed action because no living tortoises were observed within the project site. The actual number of desert tortoises on the project site as of the commencement of construction cannot be determined from field survey data alone, due to the possibility that tortoises may have been overlooked during surveys (i.e., underground in burrows, eggs in an underground nest, juveniles in various types of refugia, etc.) or may have moved onto the site since surveys were completed. This Translocation Plan anticipates that 5 or fewer tortoises occur on the DHSP site, and would necessitate translocation prior to construction. However, this Plan also includes provisions for expanded monitoring to be implemented if more than 5 tortoises must be translocated, consistent with USFWS guidance (2011c). This is a conservative approach and it is likely that fewer tortoises, or none at all, may be found on the DHSP site during preconstruction surveys and would necessitate translocation.

Active desert tortoise sign was documented along the DSSF gen-tie line during surveys for that project. The DHSP would share the same gen-tie alignment. The northern portion of the gen-tie line along Kaiser Road lacked evidence of recent tortoise activity. Active sign was found along the gen-tie line east of Highway 177 and north of I-10, including one live tortoise observed within 30 meters of the center of the gen-tie line (Ironwood and Woodard 2011). Abundance and distribution of desert tortoises and sign are not described in further detail because off-site translocation of desert tortoises is not proposed for the gen-tie component of the DHSP. Instead, any tortoises observed in the vicinity of gen-tie work areas would be monitored and work activities would be scheduled or modified to avoid any potential take. If necessary, tortoises may be translocated no more than 500 meters, out of harm's way.

3. Recipient and Control Sites

This section describes the proposed recipient and control sites in terms of the most recent USFWS guidance document and protocols for the preparation of desert tortoise translocation plans (USFWS 2011c; J. Fraser, USFWS, personal communication 2011). The 3 recipient sites and the control site proposed in this Translocation Plan are the same sites that were reviewed for the adjacent DSSF Project (now under construction). For that project's Desert Tortoise Translocation Plan, Ironwood and Woodard (2011) used Geographic Information System (GIS) software to assess lands located within 40 kilometers (22 miles) of the DSSF site boundaries to identify potential recipient sites. They identified 3 suitable recipient sites and 1 control site for that project, based on a series of recipient site selection criteria developed from then-current USFWS (2009; 2010b) guidelines and consultation with BLM, CDFG, and USFWS. The same sites are proposed as recipient and control sites for the DHSP Translocation Plan because of their suitability for the DSSF project, and because any tortoises that would be translocated from the DHSP site would be from the same population as those translocated for the DSSF Project.

To date, 4 desert tortoises have been located in the portions of the DSSF project currently under construction. These tortoises have been or will be translocated to the Sunlight Recipient Site, (below). Based on discussions with USFWS, BLM, and CDFG biologists, this translocation plan ranks the three potential recipient sites in order of preference as follows:

1. Sunlight Recipient Site. The Sunlight Recipient Site is the preferred translocation site due to its proximity to the DHSP site and relative distance from hazards, such as busy roads; however, depending on the final number of tortoises translocated from the DSSF site into the Sunlight Recipient Site, it may be unsuitable for additional translocated animals due to potential for overcrowding.
2. Chuckwalla Recipient Site. The Chuckwalla Recipient Site is ranked second, due to its proximity to the DHSP site and its location within the Chuckwalla Desert Wildlife Management Area (DWMA). However, the proposed Eagle Mountain Pumped Storage Project (EMPSP) Draft EIS (FERC 2010) indicates that the gen-tie line for that project may be built along Eagle Mountain Road, at the eastern boundary of the Chuckwalla Recipient Site, which could contribute to habitat degradation and the potential for injury or mortality to translocated tortoises from construction, O&M, or decommissioning activities associated with that line.
3. DuPont Recipient Site. The DuPont Recipient Site is ranked third, due to its distance from the DHSP site.

Since finalization of the DSSF Translocation Plan, the USFWS has revised its Translocation Plan Guidance (2011c). The most recent guidance document lists seven criteria for consideration in selecting prospective recipient sites, noting that sites failing to meet criteria 1-3 (noted with asterisks) will be disqualified from consideration. In addition, the revised guidance defines recipient sites to encompass the area within a 6.5-km radius of the set of release points, to account for expected dispersal following release.

1. *The site supports desert tortoise habitat suitable for all life stages. [Note that reviews of desert tortoise habitat and ecology, e.g., USFWS 2011b, do not distinguish among life stages in descriptions of suitable habitat].
2. *Disease prevalence within the resident desert tortoise population is less than 20 percent.
3. *The site is at least 10 km from major unfenced roads or highways. Distance from roads may be

reduced if the proposed action includes provisions to install and maintain desert tortoise exclusion fencing as a minimization measure.

4. The site is within 40 km of the project site, with no natural barriers to movement between them, to ensure that the desert tortoises at the two sites were likely part of a larger mixing population and similar genetically (note that there are several significant anthropogenic barriers to movement in the areas surrounding the DHSP site, including I-10, Hwy 177, and the above-ground portions of the Colorado River Aqueduct; see Figure 5).

5. The site occurs on lands where desert tortoise populations have been depleted or extirpated yet still support suitable habitat. Depleted areas may include lands adjacent to highways.

6. The site has no detrimental rights-of-way (ROWs) or other encumbrances.

7. The site will be managed for conservation so that potential threats from future impacts are precluded. In the project region, DWMAs, designated critical habitat units (CHUs), areas of critical environmental concern (ACECs), National Park Service lands, and BLM Wilderness Areas are managed for conservation.

Sections 3.1 through 3.3, below, assess the three potential recipient sites in terms of the USFWS selection criteria listed above. As shown on Figure 6, the three potential recipient sites are also modeled as having habitat potential equal to or greater than that modeled on the DSSF and DHSP sites (Nussear et al. 2009). If the identified sites cannot be used for translocation purposes due to density thresholds or disease prevalence, alternate recipient site(s) will be identified in consultation with CDFG, USFWS, and BLM.

3.1 Sunlight Recipient Site

The proposed Sunlight Recipient Site is shown on Figure 7 and described below. The Sunlight Control Site is 1,613 ha (3,986 ac), located north of the DSSP boundary.

USFWS Selection Criteria (2011c; * indicates required criterion)

1. *Desert tortoise habitat suitability. The Sunlight Recipient Site supports Creosote Bush-White Bursage vegetation and several areas of Blue Palo Verde-Ironwood-Smoke Tree Series vegetation (Desert Dry Wash Woodland), similar to habitats found on the DHSP site. These habitats support all life stages of the desert tortoise (USFWS 2011b).
2. *Disease prevalence. Data on disease prevalence in the resident population are not available. During field surveys for the DSSF project, 32 desert tortoises were observed and no clinical signs of URTD were noted. These data would be collected upon issuance of a Biological Opinion from the USFWS and Consistency Determination or Incidental Take Permit (ITP) from CDFG.
3. *Minimum 10 km distance from major unfenced roads or highways. The closest point of the Sunlight Recipient Site is approximately 15 km (9 miles) north of I-10. Kaiser Road is located at the western boundary of the mapped recipient site. It is unfenced, but is not a major road or highway.
4. Within 40 km of the project site, with no natural barriers to movement between them. The mapped site described in the DSSF Translocation Plan is 4 to 11 km from the DHSP site. There are no natural barriers to dispersal between the two sites.

5. Resident desert tortoise population depletion. The site does not show evidence of desert tortoise population depletion (e.g., numerous carcasses). Tortoise population densities in the site were estimated at 3.4 tortoises per km2 (Ironwood and Woodard 2011). The estimated average density is 5.3 tortoises per km2 for the Colorado Desert Recovery Unit, and USFWS guidance considers areas 'depleted" only if tortoise densities are less than 2.79 animals per km2 (USFWS 2011c).
6. Detrimental ROWs or other encumbrances. There are designated road and utility ROWs located within the Sunlight Recipient Site that surround unpaved roads, but they are narrow and infrequently traveled.
7. Conservation management. The Sunlight Recipient Site is located on BLM-managed lands within the Colorado Desert Recovery Unit for the desert tortoise that BLM has committed to managing as a solar exclusion area. However, the site is not within a designated DWMA, CHU, ACEC, Wilderness Area, or on National Park Service lands.

Desert tortoise field surveys at the Sunlight Recipient Site located 32 live tortoises. The USFWS (2011a) estimated that 45 subadult or adult desert tortoises may be within this site, based on density data for JTNP.

All tortoises were observed for signs of URTD, and none of them exhibited obvious clinical signs (Ironwood and Woodard 2011). All sign of desert tortoise activity, including live animals, intact burrows with or without sign of recent activity, scat (feces), tracks, and mating rings are depicted on Figure 7.

The Sunlight Recipient Site is far enough from the DHSP site (3.7 km or 2.3 miles) that it likely is not within the former home range of any tortoise that may be translocated from the DHSP site. The DSSF project, now under construction, presents a substantial anthropogenic barrier between the two sites. However, there are no natural barriers, and desert tortoises at the two sites were likely part of a local genetically related subpopulation. There are no significant anthropogenic "predator subsidies" within the Sunlight Recipient Site, such as food or water sources, that would contribute to increased numbers of ravens, coyotes, or feral dogs and consequent increased predation on desert tortoises.

Kaiser Road provides paved access for desert tortoise translocation and follow-up monitoring in the Sunlight Recipient Site. Tortoise exclusion fencing is often installed along paved roads to prevent mortality by vehicle strikes. However, fencing also fragments habitat, reducing opportunity for genetic exchange and demographic population shifts. This portion of Kaiser Road serves the community of Eagle Mountain, but it is north of most other traffic destinations, including traffic related to the DSSF or DHSP projects. Kaiser Road would, however, be the primary access route to the proposed EMPSP (FERC 2010), if that project is implemented. The Draft EIS for that project includes mitigation measure AQ-6, requiring the applicant to develop a transportation management plan including ride sharing, shuttle transit, and other measures for employees to reduce vehicle trips. That project's Draft EIS also indicates that a buried water supply line would be built along this portion of Kaiser Road. Due to the low existing traffic volume on Kaiser Road, and regional importance of desert tortoise habitat connectivity (USFWS 2011a), enXco would not propose to fence Kaiser Road if desert tortoises are translocated to the Sunlight Recipient Site. However, further measures may be necessary to minimize hazards to tortoises on Kaiser Road if the EMPSP is approved and constructed.

3.2 Chuckwalla Recipient Site

The proposed Chuckwalla Recipient Site is shown on Figure 8 and described below. The site is located on 1,747 ha (4,317 ac) within the Chuckwalla CHU and DWMA west of Kaiser Road and north of I-10. The northeastern corner of this translocation site is within 1 km (0.6 mi) of the DHSP site.

USFWS Selection Criteria (2011c; * indicates required criterion)

1. *Desert tortoise habitat suitability. The Chuckwalla Recipient Site supports Creosote Bush-White Bursage vegetation and several areas of Blue Palo Verde-Ironwood-Smoke Tree Series vegetation (Desert Dry Wash Woodland), similar to habitats found on the DHSP site. These habitats support all life stages of the desert tortoise (USFWS 2011b).
2. *Disease prevalence. Data on disease prevalence in the resident population are not available. During field surveys for the DSSF project, 28 desert tortoises were observed and no clinical signs of URTD were noted. These data would be collected upon issuance of a Biological Opinion from the USFWS and Consistency Determination or ITP from CDFG.
3. *Minimum 10-km distance from major unfenced roads or highways. The Chuckwalla Recipient Site is within 10 km of I-10. In order for the site to meet this selection criterion, desert tortoise exclusion fencing would be necessary along I-10 south of the site.
4. Within 40 km of the project site, with no natural barriers to movement between them. The Chuckwalla Recipient Site is between 1 and 7 km from the DHSP site. There are no natural barriers to dispersal between the two sites. Kaiser Road, a lightly used paved road, is located between the Chuckwalla Recipient Site and the DHSP site.
5. Resident desert tortoise population depletion. Tortoise densities within the Chuckwalla Recipient Site are lower than the average for the Colorado Desert Recovery Unit. Population densities in the site were estimated at 3.2 tortoises per km2 (Ironwood and Woodard 2011), and carcasses were not found in large numbers. The estimated average density is 5.3 tortoises per km2 for the Colorado Desert Recovery Unit, and USFWS guidance considers areas “depleted” only if tortoise densities are less than 2.79 animals per km2 (USFWS 2011c).
6. Detrimental ROWs or other encumbrances. The Chuckwalla Recipient Site is between Kaiser Road and Eagle Mountain Road, and south of an emergency spillway at the Metropolitan Water District Eagle Mountain Pump Station. There are no designated or proposed detrimental ROWs or other encumbrances within the site. The Land and Mineral Legacy Rehost 2000 data base (LR2000; BLM 2011d) does not show any over-filings or pending applications for use of the Chuckwalla Recipient Site (Ironwood and Woodard 2011).
7. Conservation management. The Chuckwalla Recipient Site is located on BLM-managed lands within the Colorado Desert Recovery Unit and within the Chuckwalla DWMA and CHU.

Desert tortoise field surveys at the Chuckwalla Recipient Site located 28 live tortoises (Ironwood and Woodard 2011). All were observed for signs of URTD, and none of them exhibited obvious clinical signs (Ironwood and Woodard 2011). Based on these data, the USFWS (2011a) estimated that there are 49 subadult and adult desert tortoises; between 9 and 40 juveniles; and that reproductive females may produce approximately 211 eggs per year within the Chuckwalla Recipient Site. All sign of desert tortoise activity, including live animals, intact burrows with or without sign of recent activity, scat (feces), tracks, and mating rings are depicted on Figure 8. The Chuckwalla Recipient Site is close enough to the DHSP site (less than 1.5 km) to be within the home range of tortoises that may be in the western portion of the DHSP site. There are no significant natural barriers to movement on or adjacent to the Chuckwalla Recipient Site. The Chuckwalla Recipient Site is within a potential connectivity corridor extending from the Pinto Basin and JTNP, southward through upper Chuckwalla Valley and south beyond I-10.

The use of the Chuckwalla Recipient Site would be contingent upon several conditions relating to its proximity to roads and a potential future gen-tie ROW. The site is less than 10 km from Interstate 10. In order to meet the USFWS required criterion 3 (above), the north side of I-10 would need to be fenced to exclude tortoises along approximately 20 km of its length. Fencing on Kaiser Road may also be necessary, depending on traffic volume during construction and operation of the DHSP, DSSF, and possibly EMPSP. In addition, the EMPSP gen-tie alignment along Eagle Mountain Road may degrade habitat suitability or increase raven activity (due to perch or nest site "subsidies" on the gen-tie towers within the Chuckwalla DWMA, including the recipient site. (Note that FERC staff's recommended alignment would not be within the Chuckwalla DWMA). The Chuckwalla Recipient Site is also near the proposed DHSP/DSSF gen-tie alignment along Kaiser Road; and the project gen-tie also may serve as raven perch or nest subsidies.

If desert tortoises are translocated into the Chuckwalla Recipient Site, the preferred release point would be in the northern part of the recipient site, north of the unnamed hills approximately 1 km west of Kaiser Road, because it is furthest from I-10 and Desert Center. The intervening hills may minimize tortoise movement toward I-10.

Ironwood and Woodard (2011) noted that coyote and kit fox sign were highest in the southwest part of the Chuckwalla Recipient Site. The community of Desert Center may be a source of predator subsidies (food and water) to both species, as well as feral dogs. Utilization of the northern release point described above may reduce vulnerability to predation for translocated desert tortoises. In addition, the DHSP and DSSF gen-tie line will be subject to Raven Management Plans to be implemented for both projects, which would reduce vulnerability to predation by ravens.

Kaiser Road and Eagle Mountain Road provide paved access for desert tortoise translocation and follow-up monitoring in the Chuckwalla Recipient Site. Tortoise exclusion fencing is often installed along paved roads to prevent mortality by vehicle strikes. However, fencing also fragments habitat, reducing opportunity for genetic exchange and demographic population shifts. This portion of Kaiser Road serves the communities of Lake Tamarisk to the south of the site and Eagle Mountain to the north, as well as construction and O&M traffic for the DSSF project and future traffic for the DHSP and possibly the EMPSP. Due to the relatively high traffic volume on Kaiser Road expected from these projects, and limited habitat availability east of Kaiser Road, enXco may propose to fence Kaiser Road south of the DHSP site if desert tortoises are translocated to the Chuckwalla Recipient Site.

3.3 DuPont Recipient Site

The proposed DuPont Recipient Site covers approximately 7,460 acres of contiguous public lands within the Chuckwalla CHU and DWMA immediately east of the Chuckwalla Wilderness Area. It is shown on Figure 9 and described below.

USFWS Selection Criteria (2011c; * indicates required criterion)

1. *Desert tortoise habitat suitability. The DuPont Recipient Site supports sandy substrates with small gravel and a sparse Creosote Bush-White Bursage vegetation community with several areas of Blue Palo Verde-Ironwood-Smoke Tree Series vegetation (Desert Dry Wash Woodland).

The vegetation is similar to those found on the DHSP site. Habitats on the DuPont Recipient Site support all life stages of the desert tortoise (USFWS 2011b).

2. *Disease prevalence. Data on disease prevalence in the resident population are not available. These data would be collected upon issuance of a Biological Opinion from the USFWS and Consistency Determination or ITP from CDFG.
3. *Minimum 10-km distance from major unfenced roads or highways. The closest major unfenced road or highway to the DuPont Recipient Site is I-10, approximately 5.0 km (3.1 miles) north. In order for the site to meet this selection criterion, desert tortoise exclusion fencing would be necessary along I-10 north of the site.
4. Within 40 km of the project site, with no natural barriers to movement between them. The DuPont Recipient Site is approximately 32 km (20 miles) southeast of the DHSP site. There are no natural barriers that would have limited gene flow between the sites. I-10 is now a significant anthropogenic barrier between the sites.
5. Resident desert tortoise population depletion. Desert tortoise densities at the DuPont Recipient Site are unknown.
6. Detrimental ROWs or other encumbrances. There are no existing designated ROWs or other encumbrances that would conflict with desert tortoise habitat suitability within the DuPont Recipient Site.
7. Conservation management. The DuPont Recipient Site is located primarily on BLM-managed lands within the Colorado Desert Recovery Unit and the Chuckwalla DWMA and CHU for desert tortoise. One 259 ha (640 acre) inholding within the DuPont Recipient Site is owned and managed by the State of California. No tortoises would be translocated to this parcel, although they would be likely to use habitat resources there following the translocation.

The DuPont Recipient Site is 32 km from the DHSP site, and on the south side of I-10, well outside potential home ranges of any tortoises that may be on the DHSP site. Desert tortoises have been observed in the DuPont Recipient Site, but field survey data are not available and desert tortoise densities are unknown. US Geological Survey (USGS) modeling (Figure 6) suggests moderate to high habitat potential. Range-wide sampling between 2001 and 2005 within the region indicated the historical presence of tortoise (i.e., carcasses) and recorded one live tortoise in 2003 (USFWS 2006, as cited in Ironwood and Woodard 2011). In September 2010, random transects were walked throughout the site to assess general habitat characteristics and habitat suitability for desert tortoise. These surveys covered approximately 20 linear miles and recorded no sign of active desert tortoise or any older sign (e.g., inactive burrows, old scat, or carcasses) (Ironwood and Woodard 2011). There are no known significant subsidies for canid or avian predators (e.g., human activity, trash dumping) and no anticipated new sources of subsidies related to new land use proposals.

Access to the area is available via unpaved roads, with travel time between the DHSP site and recipient site more than 60 minutes.

The USFWS (2011a) estimated that approximately 111 subadult and adult resident desert tortoises may be present at the DuPont Recipient Site, based on the density estimate of 3.7 tortoises/km^2 in the Chuckwalla CHU and DWMA.

3.4 Control Site

If more than 5 desert tortoises are translocated from the DHSP site, then an equivalent number of tortoises will be monitored at a control site to allow comparison of desert tortoise movement and behavior among the translocated animals, recipient population, and control population. The USFWS (2011c) states that potential control sites should:

- be similar in habitat type/quality, desert tortoise population size/structure, and disease status to the recipient sites;
- not have been previously used as a recipient site for other projects; and
- be a minimum distance of 10 km (6 miles) from an unfenced recipient site that has no substantial anthropogenic or natural barriers to prevent the interaction of control, resident, and translocated desert tortoises.

The proposed Red Cloud Control Site is located approximately 7 miles southwest of Desert Center, south of I-10 (Figure 6). Desert tortoise surveys of this site have not been conducted, but available data suggests that this site has the potential to support moderate to high densities of desert tortoise (Nussear 2009; USFWS 2006; Ironwood and Woodard 2011).

- Similar habitat to the recipient site. The proposed Red Cloud Control Site is located southwest of the Sunlight and Chuckwalla Recipient Sites and northwest of the DuPont Recipient Site. The proposed control site is comprised of intact creosote bush scrub with active alluvial fans with friable soils and prominent washes supporting desert dry wash woodland, similar to the habitats found on the project and recipient sites.
- Not previously used as a recipient site. The Red Cloud Control Site has not been previously used as a recipient site for other projects.
- Minimum distance of 10 km (6 miles) from the recipient site or have fencing or other movement barrier between sites. No portion of the Red Cloud Control Site is within 10 km (6 miles) of proposed recipient sites. In addition, there are several existing barriers to movement between the sites, including I-10 and the Chuckwalla Mountains.

4. Methods for Desert Tortoise Translocation

4.1 Overview

For projects necessitating translocation of more than 5 desert tortoises to recipient sites, the USFWS generally requires long-term monitoring of the translocated tortoises, as well as similar monitoring of resident tortoises at the recipient site and a control site. enXco anticipates that fewer than 5 desert tortoises, and possibly none at all, will be translocated for the project, and that long-term monitoring will not be necessary. However, this Translocation Plan identifies a control site and describes a monitoring plan for translocated tortoises and resident tortoises within the recipient and control sites for implementation if more than 5 tortoises are translocated. Any tortoises translocated from the DHSP site would be translocated more than 500 meters. The translocation process described in this section will apply only to tortoises found on the DHSP site or immediately adjacent to it (i.e., on the fence line). Any tortoise encountered in a work area along the gen-tie line would be allowed to leave the site on its own, or if necessary, would be relocated out of harm's way, no more than 500 meters from its original location. The translocation activities described below will be revised as needed to comply with the terms and conditions contained in the BO and the ITP or Consistency Determination upon issuance by the USFWS and CDFG.

Any desert tortoises that are found on the DHSP site during pre-construction clearance surveys will be either translocated to a recipient site or removed from the wild, depending upon disease status and resource agency direction. The survey, testing, and translocation procedures are briefly summarized here as an overview. First, the DHSP site will be fenced to prevent desert tortoises from entering it throughout the life of the project. Second, all desert tortoises within the fenced boundaries will be located by field biologists and their health conditions will be assessed visually. For tortoises that appear healthy, blood will be drawn to determine URTD status, and they will be allowed to move about all or part of the fenced project site, pending results of the disease test. Depending on their activities, they may be fitted with radio transmitters, or they may be monitored visually, by regularly confirming their locations, until they are removed from the site. Tortoises showing visual signs of illness or injury will be held in quarantine facilities on the site to prevent them from interacting with other tortoises, until they are removed from the site for transport to a suitable care facility.

Vegetation clearing, grading, and construction of the DHSP may proceed in phases. These activities will not take place in any given portion of the project site until all tortoises throughout the project site have been either translocated off the site or held in fenced areas or quarantine enclosures elsewhere on the project site pending translocation or transport to a care facility. Holding areas will be away from work areas, and protected by exclusion fencing so that tortoises cannot access the work areas.

Blood samples will be sent to a laboratory for disease assay. No tortoises will be translocated from the site until the test results are returned. Depending upon the results of the visual health assessment and laboratory disease test, tortoises may be translocated to the selected recipient site or may be removed from the wild. After all pre-construction clearance surveys and visual health evaluations are complete, the Designated Biologist and Resource Agencies (USFWS and CDFG) will tentatively determine the number of tortoises to be removed from the site, and will prepare a Disposition Plan for each tortoise. Depending on the numbers of healthy and diseased or injured tortoises, translocation activities will proceed as follows:

- If the total number of tortoises to be removed from the site (including healthy animals and any sick or injured ones) is 5 or fewer, then a mitigation fee may be assessed in lieu of translocating and monitoring these tortoises (USFWS 2011c). This option is consistent with Mitigation Measure MM-WIL-2 of the DHSP DEIS (see Section 7, below).
- If the total number of tortoises to be removed from the site (including healthy animals and any sick or injured ones) is 5 or fewer, then a mitigation fee may be assessed in lieu of translocating and monitoring these tortoises (USFWS 2011c). This option would be consistent with the terms of the DHSP EIS (see Section 7, below).
- If more than 5 tortoises will be translocated to a recipient site (excluding diseased or injured tortoises to be removed from the wild), then field work at the recipient and control sites will be initiated to locate an equivalent number of tortoises at each site to be fitted with transmitters for monitoring, and to evaluate disease status of the recipient site population (USFWS 2011c). The monitoring plan (Section 5) will be implemented.
- Any injured or diseased tortoises that are removed from the wild will be transferred to the Desert Tortoise Conservation Center in Las Vegas, Nevada or an alternate facility to be determined in consultation with Resource Agencies.

4.2 Designated Biologist and Biological Monitors

Prior to initiation of any ground-disturbing activity, including installation of tortoise exclusion fencing, enXco will appoint a Designated Biologist and one or more Biological Monitors, as described in Mitigation Measure VEG-1 of the DHSP DEIS and Section 8 of this Translocation Plan. The Designated Biologist will hold appropriate USFWS and CDFG authorizations to handle desert tortoises, perform visual health assessments, draw blood for disease testing or other clinical purposes, and carry out any other activities related to desert tortoise handling as may be required by the USFWS or CDFG. The Designated Biologist also will be responsible for training and supervising Biological Monitors who conduct desert tortoise surveys, monitor tortoises, or implement any other aspect of this Translocation Plan. The Designated Biologist will be enXco's primary point of contact for BLM, USFWS, and CDFG regarding implementation of this Translocation Plan.

4.3 Tortoise Exclusion Fence

Tortoise exclusion fencing will be constructed around the perimeter of the DHSP site prior to desert tortoise clearance surveys, pre-construction site preparation, or any construction-related activities. enXco will coordinate with DSSF to determine whether DHSP may share the existing exclusion fence on the shared boundary between the two project sites, or if a separate fence must be constructed. If a separate fence is built on the shared boundary, enXco will build tortoise exclusion fencing across any opening at the east and west ends of the shared boundary to prevent desert tortoises or other wildlife from entering any narrow passageway between the two fences, where they would likely become entrapped. Upon completion of desert tortoise exclusion fencing around both project sites and pre-construction clearance surveys within each site, the shared boundary fence will no longer serve to exclude desert tortoises from either project area, and need not meet design requirements for tortoise exclusion fencing. With this exception, fences will be constructed and maintained according to USFWS (2005) specifications. enXco may also construct one or more temporary tortoise exclusion fences within the interior of the project site to allow for phased project construction in part of the ROW while tortoises are held in situ on the remainder of the site.

Fence construction may take place during any season. Construction disturbance for fence installation will be limited to 15 feet on either side of the fence centerline. The limits of disturbance for fence construction will be staked on the ground and enXco shall provide a figure for USFWS, CDFG, and BLM review clearly depicting the limits of construction disturbance for the proposed fence installation at least 30 days prior to any ground disturbance. No more than 10 days prior to fence construction, the fence line and an adjacent buffer 30 feet wide on either side of the centerline will be surveyed for desert tortoises and sign. Survey transects for fence construction will be no wider than 15 feet and will conform to pre-construction clearance survey methods described by the USFWS (2009). If the disturbance area for all or part of the fence construction activities must be wider than 15 feet on either side of the centerline, then pre-construction surveys will extend at least 15 feet beyond the limits of disturbance. Pre-construction surveys will be carried out by the Designated Biologist and one or more Biological Monitors, under the Designated Biologist's supervision.

Any active tortoises found above ground on the fence alignment or adjacent buffer area (including the surveyed area described above and any incidental tortoise observations up to 50 m beyond the fence line) during the preconstruction clearance survey or during construction will be placed inside the DHSP site and handled as described in Section 4.5, below. Their locations will be monitored during fence construction to ensure that they do not leave the project area.

During fence construction, the Designated Biologist or Biological Monitor will be on site during all construction activities. They will be responsible for surveying work areas for tortoises or sign, and ensuring compliance with the project Worker Environmental Awareness Program (WEAP).

It is possible that the exclusion fence may cross the home range of a desert tortoise, preventing it from accessing part of its normal range. The exclusion fence will be monitored twice daily during fence construction and for 7 days following completion of its construction to locate any tortoise that may be pacing the fence. Thereafter, the exclusion fence will be inspected daily throughout desert tortoise spring and fall activity seasons (approximately April 1 to May 31 and September 1 to October 15) for one year after fence completion. Outside of tortoise activity seasons, and for the remainder of the life of the project, the fence will be inspected monthly and maintained as needed. Any damage to the fence that could allow a tortoise to enter the site will be repaired promptly. The fence will also be inspected during and within 24 hours following any significant rainfall event (defined as any rain storm causing measurable flow in channels or washes crossing the fence line) to ensure that storms have not damaged the fence, potentially allowing access by desert tortoises. Any damage to the fence shall be temporarily repaired immediately and permanently repaired within 48 hours. If a tortoise is found walking the fence line outside the project area, its location and activity will be monitored and the Designated Biologist will contact BLM, CDFG and USFWS to develop a Disposition Plan for the tortoise (Section 4.5).

4.4 Pre-Construction Clearance Surveys

Pre-construction desert tortoise clearance surveys will be completed throughout the fenced project area, during the spring or fall desert tortoise activity season (approximately April 1 through May 31 or September 1 through October 15). Survey transects will be no wider than 15 feet and will conform to pre-construction clearance survey methods described by the USFWS (2009). If the project area is subdivided into fenced subsections for construction phasing, then pre-construction clearance surveys will be completed and all tortoises removed from any subsection prior to initiation of pre-construction site preparation, or any construction-related activities. Clearance survey transects will be spaced at maximum widths of 15 feet. The transects will be paced slowly enough so that biologists may thoroughly view any areas partially hidden by rocks or shrubs, to ensure that all tortoises on the site are found. Any tortoises found during pre-construction surveys will be handled as described below (Section 4.5).

The entire fenced ROW area (or each fenced subsection) will be surveyed repeatedly to ensure that any tortoise within the area is located and removed prior to construction or site preparation. If one or more tortoises are located during a 100 percent coverage pass, then the entire area will be covered at least twice more. Surveys will be repeated until two consecutive 100 percent coverage passes of the site are completed without finding a tortoise or any sign of recent tortoise activity (e.g., scat or burrow) other than sign located during previous transects. Each successive full coverage pass will follow transect lines perpendicular to the previous pass (e.g., full coverage on north-south transects, than on east-west transects).

During clearance surveys all desert tortoise burrows, and all burrows constructed by other species that might be used by desert tortoises, will be examined by the Authorized Biologist and Biological Monitor(s) to assess occupancy of each burrow by desert tortoises. All potential desert tortoise burrows located during clearance surveys during the active season will be excavated carefully by hand; if desert tortoise occupancy is confirmed, excavation of the burrow and handling of tortoises will be conducted in accordance with this Translocation Plan and the most recent version of the USFWS's Desert Tortoise Field Manual (USFWS 2009). To prevent reentry by a desert tortoise or other wildlife, all burrows will be collapsed once absence has been verified.

4.5 Desert Tortoise Handling and Disposition

Desert tortoises will only be handled by biologists who are authorized by the USFWS and CDFG to do so (i.e., the project's Designated Biologist and any Biological Monitor with appropriate qualifications), and any handling of desert tortoises will follow specific terms of agency permits or MOUs, including daily, seasonal, and air or ground temperature limitations on handling (USFWS 2009). All adult or subadult tortoises located during preconstruction surveys for the exclusion fence or project construction, or located during follow-up monitoring, will be visually assessed for sign or injury or illness; blood will be drawn for URTD testing (from individuals that do not show clinical signs of disease); and held on the project site pending test results and a Disposition Plan.

Temperature Considerations. Desert tortoises will only be captured, moved, transported, released, or evicted from their burrows when the ambient air temperature ranges from 18-30°C (65-85°F) and is not forecast to exceed 32°C (90°F) within 3 hours of release or 35° (95°F) within 1 week of release. Ambient air temperature will be measured in the shade created by the observer, protected from wind, at a height of 2 inches (5 cm) above the ground surface. Deviation from these temperature thresholds may be considered in coordination with the Resource Agencies.

Inactive Desert Tortoises. Pre-construction clearance surveys will be conducted during the spring or fall desert tortoise activity seasons (approximately April 1 to May 31 and September 1 to October 15), and any tortoises found during these surveys would likely be active. However, it is possible that one or more tortoises may be located outside or near the end of the activity season (i.e., during pre-construction fence alignment surveys). Additionally, a tortoise may display minimal activity by remaining near a burrow entrance, even during the general activity season. In these cases, the tortoise may be left in place until the next activity season or, if needed to avoid injury, may be "blocked" into an artificial burrow on the project site during winter inactivity season, but not during summer (USFWS 2009; 2011c). Inactive tortoises found within the fence alignment or within 50 m of it will be moved out of harm's way into an artificial or empty natural burrow, inside of the perimeter fence (i.e., onto the DHSP site), and monitored. Depending on season and temperature considerations, the tortoise may be blocked into the burrow, or a temporary desert tortoise exclusion fence may be built at a 100 m radius surrounding the burrow (enclosing the inactive tortoise within an 8 acre area). If a tortoise within a burrow must be moved, every effort will be made to cause it to leave the burrow on its own (e.g., pounding the ground, "tapping," or repeated visits to the burrow at warmer or cooler times of day) prior to using the less-preferred method of carefully excavating the burrow by hand (USFWS 2009).

Tortoises confined in burrows or within 100 m radius enclosures, will be monitored for activity and safety daily for at least 1 week; then weekly for at least 3 weeks; then twice monthly until either translocation or transfer to a quarantine enclosure.

Eggs, Hatchlings, or Juvenile Tortoises. If a clutch of eggs is located during pre-construction clearance surveys, the location will be recorded and the nest will be monitored daily from a distance, using binoculars, to prevent the possibility of identifying the nest to avian or canid predators. The Designated Biologist will contact the USFWS, CDFG, and BLM to determine the best course of action, depending on date, vulnerability to predation, and construction schedule. The eggs may be left in place to hatch, or may be collected and translocated. If the eggs do not hatch in place, they will be inspected to determine if they are viable. If so, the Designated Biologist or another USFWS Authorized Biologist will translocate them to a replacement nest in a comparable micro-area (e.g., cover, project species, soil type, substrate, and aspect) at the recipient site, in accordance to the USFWS Desert Tortoise Field Manual (USFWS 2009). Translocated nests will be fenced with sturdy open-mesh fencing (e.g. 2-inch wide chain link mesh) that will permit hatchlings to escape but prevent depredation by canids that might be attracted to the new nests by human scent. Open-mesh fencing or avian netting also will be installed on the roof to prevent predator entry. The replacement nest location(s) will be added to the long-term monitoring program.

If hatchling or juvenile desert tortoises measuring less than 120 mm midline carapace length or weighing less than 100 grams (i.e., too small for marking, radio transmitters, or blood collection) are located during clearance surveys, they will be carefully collected from the field and maintained in disinfected, separate containers either indoors or in on-site quarantine enclosures, depending on season, temperatures, and anticipated holding time. The Designated Biologist will contact the USFWS, CDFG, and BLM to determine the best course of action.

Visual Health Assessment. Visual health assessments will be conducted by biologists approved and permitted by the BLM, USFWS, and CDFG to conduct such assessments, following USFWS guidance (2011c). Visual health assessments will be performed upon locating tortoises during pre-construction field surveys; prior to translocation; and if more than 5 tortoises are translocated, repeated periodically during long-term monitoring (Section 5.2). At a minimum, for all desert tortoises handled, the Authorized Biologist will mark the animals with unique identification numbers as assigned by the USFWS and record data as recommended by the USFWS (2011c; 2011d), including:

- Locations (narrative and maps) and dates of observation;
- General condition and health, including injuries, state of healing and whether desert tortoise voided its bladder during handling;
- Locations the tortoise is moved from and moved to (GPS coordinates);
- Gender, midline carapace (shell) length, weight, and diagnostic markings (i.e., identification numbers or marked lateral scutes [shell segments]);
- Ambient temperature when handled and released; and
- Digital photograph of each desert tortoise handled.

Tortoises showing evidence of injury or illness will be held in quarantine enclosures (below) on the project site, pending preparation and approval of a Disposition Plan and relocation to the Desert Tortoise Conservation Center in Nevada or other offsite location. Tortoises appearing healthy will be held on the site for disease testing and disposition.

Holding *in situ*. Healthy appearing tortoises will be held on the project site until blood is drawn, test results are received and Disposition Plans (below) are prepared by the Authorized Biologist and approved by USFWS and CDFG. The tortoises will either be (1) fitted with a radio transmitter (below) and allowed to move throughout all or part of the project area (i.e., within the tortoise exclusion fence and away from any project construction area); or (2) held within a fenced 100 m radius (8 acre) area surrounding the active or occupied burrow to enable subsequent relocation. No tortoise will be held on the site for longer than 18 months.

Disease Testing. All tortoises larger than 120 mm median carapace length or weighing more than 100 grams (3.5 ounces) and showing no apparent illness or injury will be tested for URTD using an enzyme-linked immunoabsorbent assay (ELISA) test and held on the site pending test results. Because physiological activity of the tortoise immune system is related to behavioral activity, blood samples will be drawn no earlier than May 15 or, upon specific approval from USFWS and CDFG, four weeks after the date that the tortoise left its hibernaculum or was first found active and above ground away from a shelter site. The last date for blood sampling will be October 31. In order to minimize handling on any given day, blood drawing and transmitter attachment (below) will only be done on the same day if these activities combined will not exceed restrictions of time of day, temperature, and total time handled (USFWS guidance provided at recent health and disease workshops and *Desert Tortoise Field Manual,* USFWS 2009). If these restrictions could be exceeded, then the two activities will be done on separate days.

Tortoises with positive URTD test results will be held in quarantine enclosures (below) on the project site, pending preparation and approval of a Disposition Plan and relocation to the Desert Tortoise Conservation Center in Nevada or other offsite location. If test results are inconclusive, the animal will be held in a quarantine enclosure until results of a second test are available.

Quarantine Enclosure: Tortoises showing visual evidence of illness or injury, or testing positive or inconclusive for URTD will be held in quarantine enclosures on the site, pending transport to the Desert Tortoise Conservation Center (DTCC) in Nevada, or (for inconclusive disease tests) results of repeated tests. The specific locations of the enclosures will be determined by the Designated Biologist prior to initiation of preconstruction clearance surveys, in consultation with BLM, USFWS, and CDFG. The Designated Biologist may recommend holding them at an alternate offsite facility, pending approval of the BLM, USFWS, and CDFG. The enclosure design and the care of tortoises held in them will follow protocols described by San Diego Zoo Global (*Temporary Captive Care of Wild Mojave Desert Tortoises: Examples of Protocols Used at the Desert Tortoise Conservation Center*, Appendix 1 to USFWS 2011c) or the most recent USFWS translocation guidance. The enclosures will be at least 20 m × 20 m (65.6 ft × 65.6 ft). Husbandry of the quarantined animals, including aseptic techniques and site security from predators and humans; and provision of burrows, food, and water will conform to recommendations of San Diego Zoo Global (cited above). Quarantined tortoises will be monitored in accordance with surveillance recommendations of San Diego Zoo Global. The quarantine period will not exceed 18 months. Every attempt will be made to translocate or transport to the DTCC each animal within 18 months of the date it was initially discovered.

Disposition Plan. The Designated Biologist will recommend a Disposition Plan for each tortoise and submit the plans to the USFWS, BLM, and CDFG for concurrence prior to moving any desert tortoises. Each Disposition Plan will include the visual health assessment and URTD test results. Desert tortoises will not be taken off the project site prior to concurrence by the BLM, USFWS, and CDFG with the Disposition Plan.

If a desert tortoise is determined to be sick or injured, BLM, USFWS, and CDFG will be notified within 24 hours of such discovery. The Designated Biologist will generally recommend transport to the Desert Tortoise Conservation Center. In some cases (e.g., minor injuries) the Designated Biologist may recommend observation for possible future translocation in the wild. If a tortoise is transported outside the State of California it will only be with CDFG's prior written consent. The Applicant shall submit to CDFG a written request indicating the number of desert tortoises to be relocated out of state, the reason for relocating them (i.e., the nature of the disease or injury), the proposed facility to which the desert tortoise(s) will be relocated, and the date on which they are proposed to be relocated. CDFG will provide a written response to each such request indicating, on a case-by-case basis, whether the relocation is authorized.

Tortoises that are suitable for translocation (i.e., tortoises without visual evidence of illness or injury and testing negative for URTD) will be held on the site pending authorization from BLM, USFWS, and CDFG, and until the appropriate date for translocation. The Disposition Plan will specify a recipient site, release point, and release time, date, and temperature restrictions for each tortoise. Where appropriate, the Disposition Plan will also describe any recipient site pre-release preparation (e.g., construction of artificial burrow) and pre-release animal husbandry activity (e.g., hydration).

Transmitter Attachment. If more than 5 adult and subadult tortoises will be translocated, then each one will be fitted with a radio transmitter for long-term monitoring. Transmitters will not be attached to juvenile tortoises (weighing less than 100 g or measuring less than 120 midline carapace length) unless the transmitters weigh less than 10% of the tortoise's body weight. If 5 or fewer adult and subadult tortoises will be translocated, then enXco will not be responsible for further monitoring. If radio transmitters are already in place, the transmitters may be removed, or (at the direction of BLM, USFWS, and CDFG) left in place to allow follow-up monitoring by the agencies.

Each tortoise larger than 120 mm carapace length will be assigned a unique identifier and fitted with a transmitter following methods, including handling and temperature restrictions, provided in *Review of Radio Transmitter Attachment Techniques for Chelonian Research and Recommendations for Improvement* (Boarman et al. 1998) and the most recent USFWS translocation guidance. Transmitter attachment will conform to restrictions of time of day, temperature, and total time handled (USFWS guidance provided at recent health and disease workshops and *Desert Tortoise Field Manual,* USFWS 2009). Transmitters will be replaced as necessary throughout the monitoring period (Section 5.2).

Translocation. Desert tortoises will be translocated during their spring activity periods (April 1 through May 31), well enough in advance of the summer inactive period to enable each tortoise to acclimate to the recipient site and to locate or build a suitable burrow. Release dates will be proposed in each Disposition Plan, to be reviewed and approved by the USFWS, CDFG, and BLM.

Each desert tortoise to be translocated will be visually evaluated for health and condition immediately prior to translocation. Tortoises previously considered suitable for translocation but subsequently showing clinical signs of URTD or other illness or injury will be held pending further evaluation. Healthy-appearing tortoises will be hydrated according to the most current agency guidance or protocols. They will be transported to release sites as specified in the Disposition Plans in clean, ventilated protective containers. The containers will be disinfected prior to any re-use. Tortoises will be released at unoccupied shelter sites such as burrows, spaces within rock outcrops, caliche caves, or the shade of shrubs or trees.

All translocations will take place between 0700 and 1600 hours (7:00 AM and 4:00 PM), and while air temperature is between 18° and 30°C (65-85°F). Temperatures will be taken at approximately 2 inches above ground in a shaded area. Tortoises will only be released if temperatures are not forecast to exceed 32°C (90°F) within 3 hours of release and if daily low temperatures are not forecast to be cooler than 10°C (50°F) for one week following the release date. Release locations will be identified and spatial patterns among tortoises will be maintained as consistently as possible to those found on the DHSP site. Tortoises found in close proximity to each other on the DHSP site will be released in the same area in the same proximity.

4.6 Surveys and Disease Testing at Recipient and Control Sites

If 1 or more tortoises will be translocated from the DHSP site, enXco will coordinate with USFWS, CDFG, and BLM to determine the most appropriate recipient site and need for additional density estimates, health assessments, and disease testing at the selected recipient site or control site.

If 5 or fewer tortoises will be translocated, then density estimates, health assessments, and disease testing at the selected recipient site will be arranged in coordination with USFWS, CDFG, and BLM. No health assessments, disease tests, surveys, or monitoring at the Red Cloud Control Site would be required. Portions of this section addressing the control site will not be applicable.

If more than 5 tortoises will be translocated, enXco and the Designated Biologist will commence field surveys to locate desert tortoises for disease testing (if data are not already available) and radio transmitter attachment for long-term monitoring at the selected recipient site and the Red Cloud Control Site.

During the spring or fall desert tortoise activity seasons, following or concurrent with health assessment and disease testing of tortoises at the DHSP site, surveys will be conducted at the selected recipient and control sites to: (1) confirm desert tortoise densities, (2) conduct visual health assessments and collect blood for URTD ELISA tests for all tortoises found at both sites, and (3) attach transmitters to a number of tortoises at both sites equal to the number of tortoises to be translocated. If density and disease status of the resident population at the recipient site are already known, then these new data will not be collected. For each animal handled during these surveys, data collection and identification marking will be as described in Section 4.5.

Disease prevalence at the recipient sites should not exceed 20 percent within the resident population (USFWS 2011a). No animals will be translocated to the selected recipient site until URTD test results for the resident population are available, based on a sample size of resident animals to be determined in coordination with USFWS, CDFG, and BLM.

If more than 10 percent of the resident population at the proposed recipient site test positive for URTD, then the Designated Biologist will contact BLM, USFWS, and CDFG for further guidance or to select an alternative recipient site. Because translocated desert tortoises will disperse from initial release sites, to further reduce the potential for disease transmission, translocated desert tortoises will be placed a minimum distance of 1.5 km (0.9 mi) from any resident desert tortoises that have tested positive for URTD.

Table 1. Translocation of Desert Tortoises and Eggs

Size/Age of Tortoise	Translocation Strategy
Juveniles (<100 g or 120 mm MCL[1])	Visual health assessment, unique identifier, no transmitter or URTD ELISA test, translocation.
Sub-adults (120-180 mm MCL) and Adults (>180 mm MCL)	Visual health assessment, negative URTD disease test result, unique identifier, transmitter, and translocation.
Nests with potentially viable eggs	If a nest is suspected or found, the eggs will be monitored in place or carefully moved together and placed in a replacement nest created by the Designated Biologist at the recipient site. The replacement nest location(s) will be added to the long-term monitoring program.

1 – midline carapace length

4.7 Linear Project Components

Pre-construction clearance surveys and construction of the gen-tie line may occur at any time of the year (USFWS 2010b). Any desert tortoises found during clearance of linear facilities shall be allowed to leave on their own or moved out of harm's way following clearance and handling procedures outlined in the current *Desert Tortoise Field Manual* (USFWS 2009). Tortoises shall not be moved more than 500 meters from their original location. Pre-construction surveys, construction monitoring, and any handling of a tortoise (if needed) will be as follows.

1. Within 30 days prior to construction, a clearance survey will be conducted along each portion of the gen-tie line and all active desert tortoise sign mapped and communicated to the Designated Biologist and site-specific Biological Monitor(s).
2. Biological Monitors shall be on the work site during all construction activities to ensure that active burrows along the gen-tie line will be avoided by project construction activities and facilities.
3. If a desert tortoise is found along the gen-tie line or in any work area associated with the gen-tie line, adverse effects will be avoided by allowing the tortoise to passively traverse the site while construction in the immediate area is halted. If the tortoise does not move out of harm's way after approximately 20 minutes, the Designated Biologist or any other biologist approved by the USFWS, CDFG, and BLM to handle tortoises for the proposed action can actively move the animal out of harm's way within 500 meters of its original location. The Designated Biologist will be responsible for taking appropriate measures to ensure that any desert tortoise moved in this manner is not exposed to temperature extremes which could be harmful to the animal. The Designated Biologist or Biological Monitor(s) will remain at the work site from which the tortoise was relocated for the duration of active construction at that site to ensure the animal does not return.
4. All vehicles parked in desert tortoise habitat will be inspected immediately prior to being moved. If a tortoise is found beneath a vehicle, the Designated Biologist will be contacted to move the animal from harm's way, or the vehicle will not be moved until the desert tortoise leaves of its own accord.

5. Monitoring and Reporting

All activities related to monitoring will be conducted by Designated Biologists identified in the project BO and associated authorizations. Standardized data sheets and/or digital data recorders will be used to record individual tortoise locations, behavior, obvious health indications (not full health assessment but limited assessment of obvious clinical signs), behavior, interactions with other animals, burrow locations, etc. during all monitoring activities.

5.1 Project Component Monitoring for Desert Tortoises: Construction, O&M, and Decommissioning

Mitigation Measure MM-WIL 1 of the Desert Harvest DEIS recommends ongoing monitoring for wildlife, including desert tortoises, during vegetation- or ground-disturbing activities throughout the construction, O&M, and decommissioning phases of the project. If a live tortoise is located during the construction phase (i.e., after the clearance surveys are completed, but before the facility is in operation), the tortoise will be handled as described in this Translocation Plan. All construction activities will temporarily stop until two consecutive full coverage clearance surveys have been repeated throughout the site, without a desert tortoise or new active sign being found.

Monitoring of vegetation- or ground-disturbing activities during O&M or decommissioning phases would also be implemented in areas not enclosed with desert tortoise exclusion fencing, including O&M or decommissioning activities for access roads, gen-tie alignment, drainage channels off the project site, and perimeter security fences or desert tortoise exclusion fences. Clearance surveys and handling of desert tortoises will be in accordance with this Translocation Plan and other project documents, as well as the most recent version of the USFWS's Desert Tortoise Field Manual (USFWS 2009).

Monitoring of the desert tortoise exclusion fence during its construction and the subsequent desert tortoise activity seasons are described above (Section 4.3). Following that period, the exclusion fence will be checked monthly and repaired, as necessary, throughout the construction, O&M, and decommissioning phases, for the life of the project. In addition, it will be checked and repaired during and within 24 hours of any significant rainfall causing visible runoff within channels on the site. Any damage to the fencing will be temporarily repaired immediately to keep desert tortoises out of the project area, and permanently repaired within 48 hours of observing damage. Any time during the life of the project that a tortoise is found walking the fence line, its location and activity will be monitored and the Designated Biologist will contact BLM, CDFG and USFWS to develop a Disposition Plan for the tortoise (Section 4.5).

Project component monitoring results throughout the construction, O&M, and decommissioning phases will be reported according to the requirements adopted in the final EIS, Record of Decision, BO, ITP, and other applicable documents.

5.2 Translocated Desert Tortoises, Recipient Site, and Control Site Monitoring

If 5 or fewer tortoises are translocated from the DHSP site, long-term monitoring of the recipient or control sites will not be required. The remainder of this section will not be applicable.

If more than 5 desert tortoises are translocated from the DHSP site to a designated recipient site, then long-term monitoring at the recipient and control sites will be implemented, as described below. All translocated desert tortoises and an equal number of resident tortoises at the Recipient Site and Control Site will be monitored on a long-term basis for a period of at least 30 years after the initial translocation date, as recommended by USFWS (2011c). The resident and control site tortoises will consist of equal or approximately equal numbers of males and females, regardless of the sex ratio of translocated tortoises (USFWS 2011c).

Monitoring will consist of locating the tortoise and attempting to view it and record its activity, without disturbing it. In some cases, the monitored animal will be handled for visual health assessments or to maintain or replace a transmitter.

The monitoring schedule for translocated tortoises will be:

- Once within 24 hours of release;
- A minimum of twice weekly for the first 2 weeks after release;
- A minimum of once a week from March through early November for the duration of the 30-year monitoring period; and
- Once every 2 weeks from November through February for the duration of the 30-year monitoring period.

The monitoring schedule for resident and control tortoises will be:

- A minimum of once a week from March through early November throughout the 30-year monitoring period; and
- Once every 2 weeks from November through February throughout the 30-year monitoring period.

Transmitters will be changed throughout the monitoring period as necessary to maintain battery life. At the end of the 30-year monitoring period, the Designated Biologist will coordinate with BLM, USFWS, and CDFG to determine whether transmitters should be removed and decommissioned.

5.2.1 Health Monitoring

Visual health assessments (Section 4.5) will be conducted twice annually for all monitored tortoises, including translocated, resident, and control site tortoises: once prior to overwintering (i.e., between October 15 and November 15) and once subsequent to overwintering (i.e., between March 1 and April 1). Any health problems (e.g., decline in physical condition, or evidence of disease) or mortalities observed will be reported to BLM, USFWS, and CDFG verbally within 48 hours of discovery and via email within 5 business days thereafter and will include the animal's unique identifier, location, and suspected health issue(s) and/or cause of death (if known). Fresh carcasses will be brought for necropsy as directed by BLM, USFWS, and CDFG.

5.2.2 Vegetation Monitoring

Vegetation will be qualitatively monitored each spring and fall at the recipient and control sites. The Designated Biologist will select a 0.5 km linear transect at each site and record the GPS coordinates at its start and end points. During each spring and fall tortoise activity season, a qualified biologist will walk the transect length and record all plant species observed within an estimated 5 m belt along each side of the transect. These data are intended to provide general, qualitative estimates of vegetation condition, desert tortoise forage availability, and relative abundance of native and non-native species. They are not intended as precise, replicate samples. Minor variations in the transect path or endpoints will be acceptable.

For each shrub species, the biologist will record qualitative indicators of condition as:

- Most plants flowering or fruiting and with new seasonal growth;
- Most plants flowering or fruiting but without new seasonal growth;
- Most plants with new seasonal growth but not flowering or fruiting;
- Most plants in apparently good condition but without flowers, fruits, or new seasonal growth (for drought-deciduous species, most plants with few or no live leaves but without dead branches); or
- Most or many plants evidently stressed, with dead branches (for evergreen species, plants with large numbers of dead leaves or branches).

For herbaceous plants, the biologists will record estimates of total percentage of the ground surface covered by native species and non-native species. For each annual species or perennial herb species, the biologist will qualitatively assign an abundance category, as follows:

- Dominant (throughout): numerous plants, visually dominant, and covering enough of the ground surface so that the biologist is likely to walk on them along most of the transect length;

- Dominant (patchy): numerous plants, visually dominant, and covering enough of the ground surface so that the biologist is likely to walk on them along less than half of the transect length;
- Common-abundant (throughout): Found along most of the transect length, but generally spaced widely enough to be easily avoided while walking.
- Common-abundant (patchy): Mostly found in patches, comprising less than half of the transect length, and generally spaced widely enough to be easily avoided while walking.
- Occasional: Scattered along all or part of the transect length, but not difficult to find.
- Scarce: Only one or a few plants seen.

5.3 Reporting

5.3.1 Reporting During Translocation

Within 30 days after completion of desert tortoise clearance surveys and translocation, the Designated Biologist shall submit a Desert Tortoise Clearance Survey, Exclusion Fencing, and Translocation Report to the BLM, Riverside County, USFWS, CDFG, and JTNP describing methods and results of the fencing, clearance surveys, and translocation (if any). The report will also document any other animals relocated during the clearance surveys.

5.3.2 Reporting During Long-Term Monitoring

During the period of long-term monitoring, all information related to translocation and monitoring for the previous calendar year will be compiled by the Designated Biologist and submitted along with all annual report information to the USFWS, CDFG, BLM, and JTNP on or before January 15 for the preceding calendar year. Annual reports will summarize all long-term monitoring activities conducted during the previous calendar year including health assessments, vegetation monitoring, and any adaptive management employed. Each report will include data summary tables and short narrative descriptions of monitoring activities, observations, and (if applicable) notation of any concerns or recommendations.

5.3.3 Final Report

Following the completion of the 30-year monitoring program, a final report will be completed that will assess the overall success of the translocation and monitoring program. The final report will summarize all long-term monitoring activities and will discuss any observed differences in individual or group behaviors in the translocated, recipient, and/or control populations; overall tracking of health assessments for each monitored tortoise; an overview of the 30 years of vegetation monitoring; and any adaptive management employed throughout the long-term monitoring period and an assessment of the success of each adaptive management strategy (see Section 6 below). Copies of the final report shall be submitted to the BLM, CDFG, USFWS, and JTNP.

6. Adaptive Management

enXco will be prepared to modify or amend this Translocation Plan, including methods and locations for translocating desert tortoises, follow-up monitoring, or other components, if necessary and appropriate. Any adaptive management actions will be proposed by the Designated Biologist in response to specific management issues that arise that pose a threat to monitored tortoises, including translocated, recipient, and control site tortoises. Adaptive management strategies will be discussed with BLM, USFWS, and CDFG.

If there are concerns regarding immediate threat to a tortoise, adaptive management decisions (e.g., to relocate a tortoise away from a road) will be made in the field with phone calls or emails to agency personnel made within 72 hours to describe the actions taken to avoid or minimize the threat, as well as any actions recommended to avoid similar threats in the future. If the situation does not pose an immediate threat to one or more tortoises, agencies will be notified of proposed adaptive management decisions for concurrence or additional direction and response from agency personnel before actions are taken.

7. Alternative to Translocation

As an alternative to translocation, the Final DHSP Translocation Plan will identify a strategy to remove desert tortoises on the project site from the wild and place them permanently in facilities approved by USFWS and CDFG, to be fully funded by the project Owner. Current USFWS guidelines (2011c) include a provision that if 5 or fewer tortoises are located on a site, they may be removed from the wild and placed with a USFWS and State-approved program. The only potential program currently known is the Desert Tortoise Conservation Center in Las Vegas Nevada, operated by San Diego Zoo Global. This program is generally considered appropriate only for tortoises deemed inappropriate for translocation (i.e., sick or injured tortoises). Removing healthy tortoises from the wild would avoid risks and adverse impacts of translocation (described in the DHSP DEIS) but also would prevent those animals from contributing to the recovery of wild desert tortoise populations.

8. Roles and Responsibilities and Project Contacts

8.1 Roles and Responsibilities

enXco will appoint a Designated Biologist and one or more Biological Monitors who will be responsible for the implementation of all desert tortoise translocation and monitoring activities. The resumes of the proposed Designated Biologist and Biological Monitors shall be submitted to the BLM, USFWS, and CDFG for approval prior to their appointment on the project. If at any time a personnel change is proposed for these positions, enXco will obtain approval for the new personnel from BLM, USFWS, and CDFG.

8.1.1 Designated Biologist

The Designated Biologist will hold appropriate USFWS and CDFG authorizations to handle desert tortoises, perform visual health assessments, draw blood for disease testing or other clinical purposes, and carry out any other activities related to desert tortoise handling as may be required by this Translocation Plan or by the USFWS or CDFG. The Designated Biologist also will be responsible for training and supervising Biological Monitors who conduct desert tortoise surveys, monitor tortoises, or implement any other aspect of this Translocation Plan. The Designated Biologist will be enXco's primary point of contact for BLM, USFWS, and CDFG regarding implementation of this Translocation Plan. The Designated Biologist duties will vary during the construction, O&M, and decommissioning phases. In general, the duties shall include, but shall not be limited to:

- Notify the BLM's Authorized Officer, Riverside County, and the Resource Agencies (USFWS and CDFG) at least 14 calendar days before initiation of ground-disturbing activities.
- Immediately notify the project Owner, BLM's Authorized Officer, Riverside County, and the Resource Agencies (as applicable) in writing of any non-compliance with any of the biological mitigation measures or permit conditions.
- Conduct continuous compliance inspections throughout the initial site preparation activities, including the construction of tortoise-exclusion fencing; pre-construction clearance surveys; and initial clearing, grubbing, and grading. Provide weekly verbal or written updates to BLM, Riverside County, and, for any information pertinent to state or federal permits, to the Wildlife Agencies.
- After the initial clearance and construction activities are complete, conduct monthly compliance inspections throughout the construction and decommissioning phases of the project, and provide weekly verbal or written updates to BLM, Riverside County, and, for any information pertinent to state or federal permits, to the Resource Agencies. Prepare and submit monthly compliance reports as required in **MM VEG-2**, and other reports as required under all applicable mitigation measures. A copy of the monthly compliance reports shall also be provided to the National Park Service (NPS).
- During the operations phase of the project, conduct quarterly compliance inspections; conduct weed monitoring and control (as required in **MM VEG-9**); prepare and submit quarterly compliance reports and other reports as required under all adopted mitigation measures.
- Be available to supervise, conduct, and coordinate mitigation, monitoring, and other biological resources compliance requirements, particularly in areas requiring avoidance or containing sensitive biological resources, such as special-status species or their habitat; and to appoint a Biological Monitor as temporary contact at any time the Designated Biologist will be unavailable.
- Respond directly to inquiries of the BLM, Riverside County, the Resource Agencies, NPS, or any other agencies regarding biological resource issues.
- Train and supervise the Biological Monitors as appropriate, and ensure their familiarity with the Worker Environmental Awareness Program (WEAP) training, mitigation measures, conditions required by biological permits and agreements, and current USFWS guidelines on desert tortoise surveys and handling procedures.
- Maintain the ability to be in regular, direct communication with representatives of the BLM, Riverside County, the Wildlife Agencies, and NPS, including notifying these agencies of dead or injured special-status species.

Designated Biologist

TBD

8.1.2 Biological Monitors

The Applicant and the Designated Biologist shall appoint Biological Monitors as needed for the construction, O&M, and decommissioning phases of the project. During the operations phase, a Biological Monitor may assume most of the on-site duties, so long as a qualified Designated Biologist is available as needed. The Designated Biologist shall submit the resume, at least three (3) references, and contact information of each of the proposed Biological Monitors to the BLM's Authorized Officer, Riverside County, and the Resource Agencies. The resume shall demonstrate, to the satisfaction of the BLM's Authorized Officer and Riverside County, the appropriate education and experience to accomplish the assigned biological resources tasks. The responsibilities, qualifications, and authority of each Biological Monitor will be the equivalent of the USFWS designated Desert Tortoise Monitor (http://www.fws.gov//_information/protocols_guidelines/index.html).

Biological Monitors

TBD

8.2 Project Applicant

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8.3 Bureau of Land Management

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Lynnette Elser, Project Manager and NEPA Coordinator
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8.4 U.S. Fish and Wildlife Service

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8.5 California Department of Fish and Game

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Dr. Shankar Sharma
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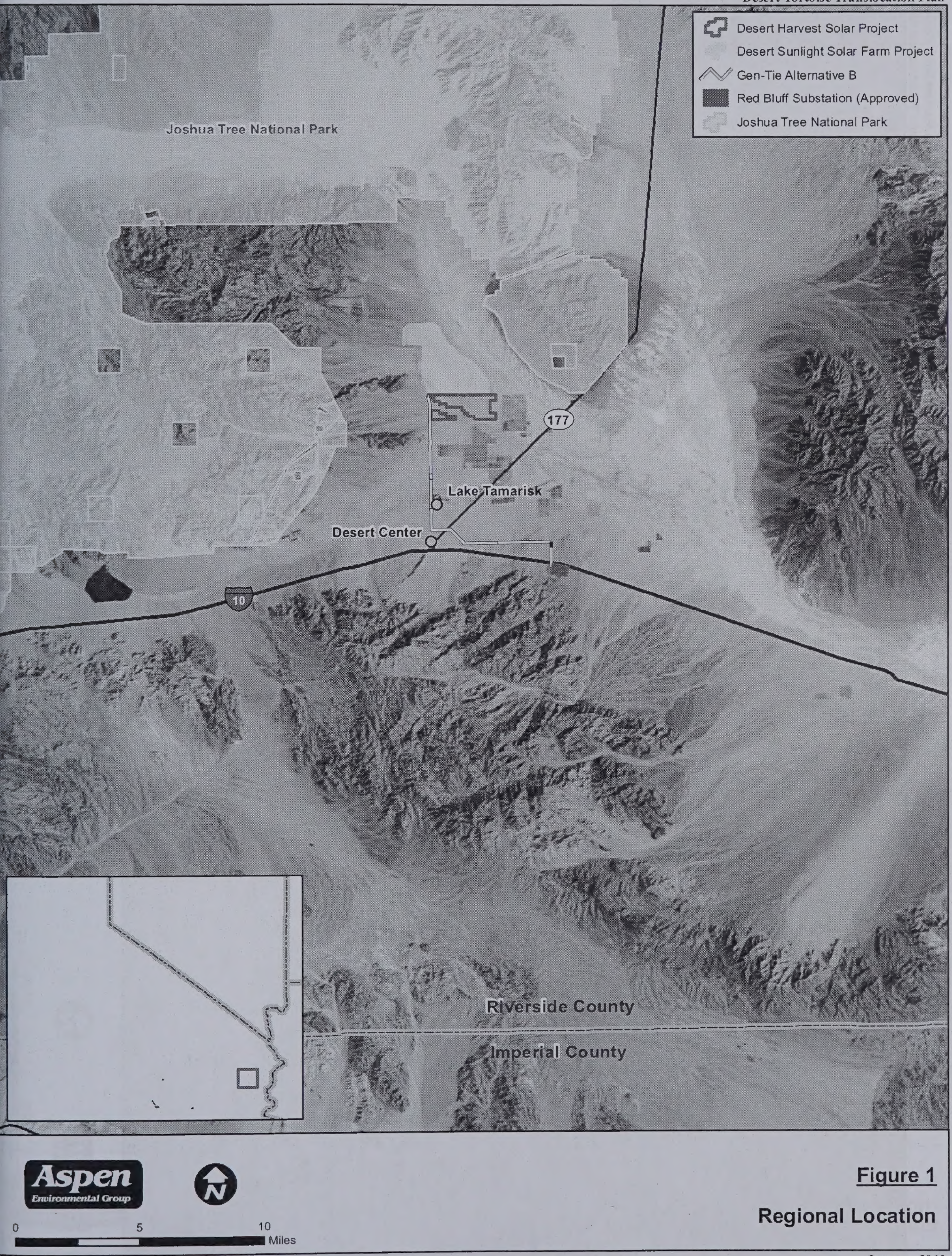

Desert Harvest Solar Project
Desert Sunlight Solar Farm Project
Gen-Tie Alternative B
Red Bluff Substation (Approved)
Joshua Tree National Park
Joshua Tree National Park
177
Lake Tamarisk
Desert Center
10
Riverside County
Imperial County
Aspen
Environmental Group
N
0
5
10
Miles

Figure 1

Regional Location

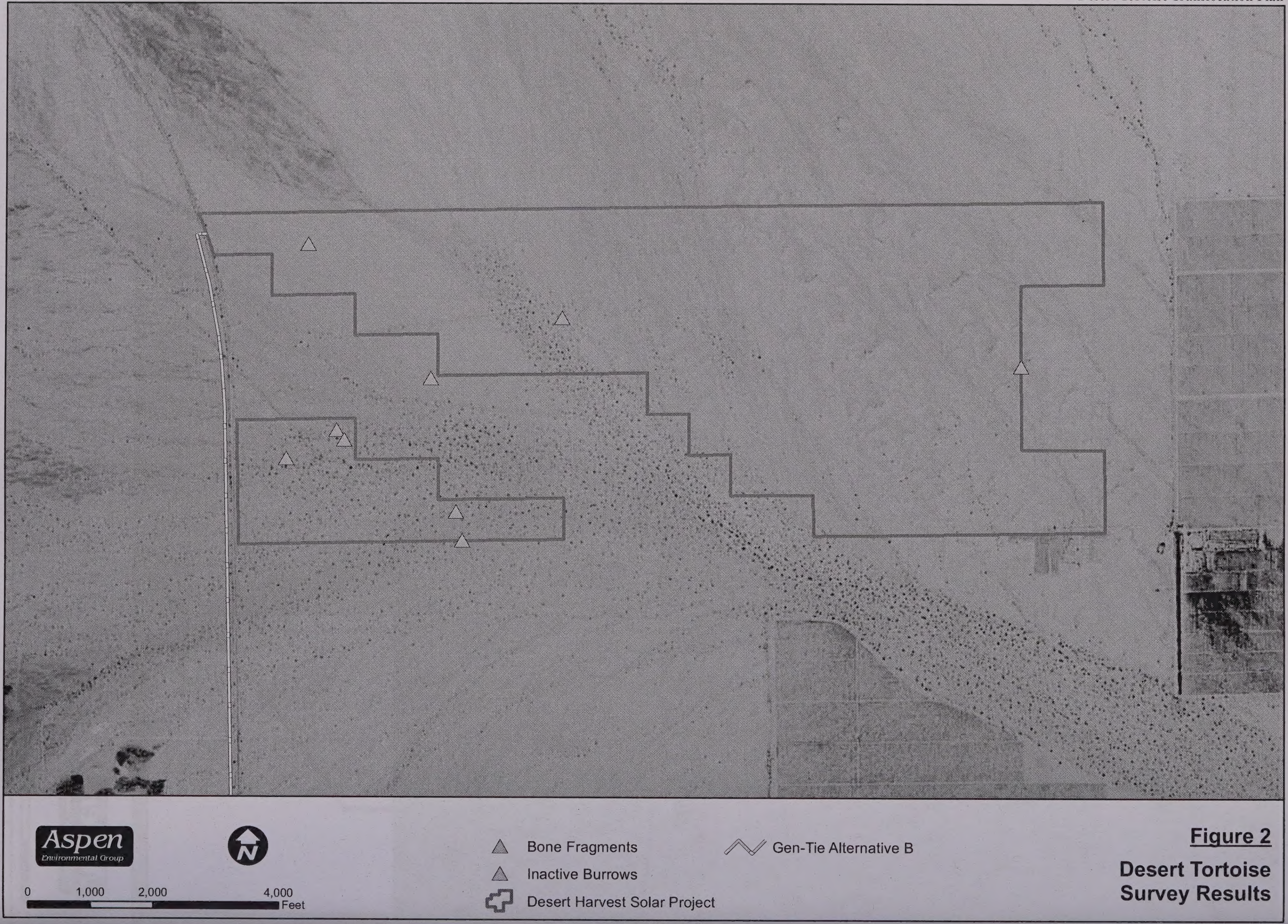
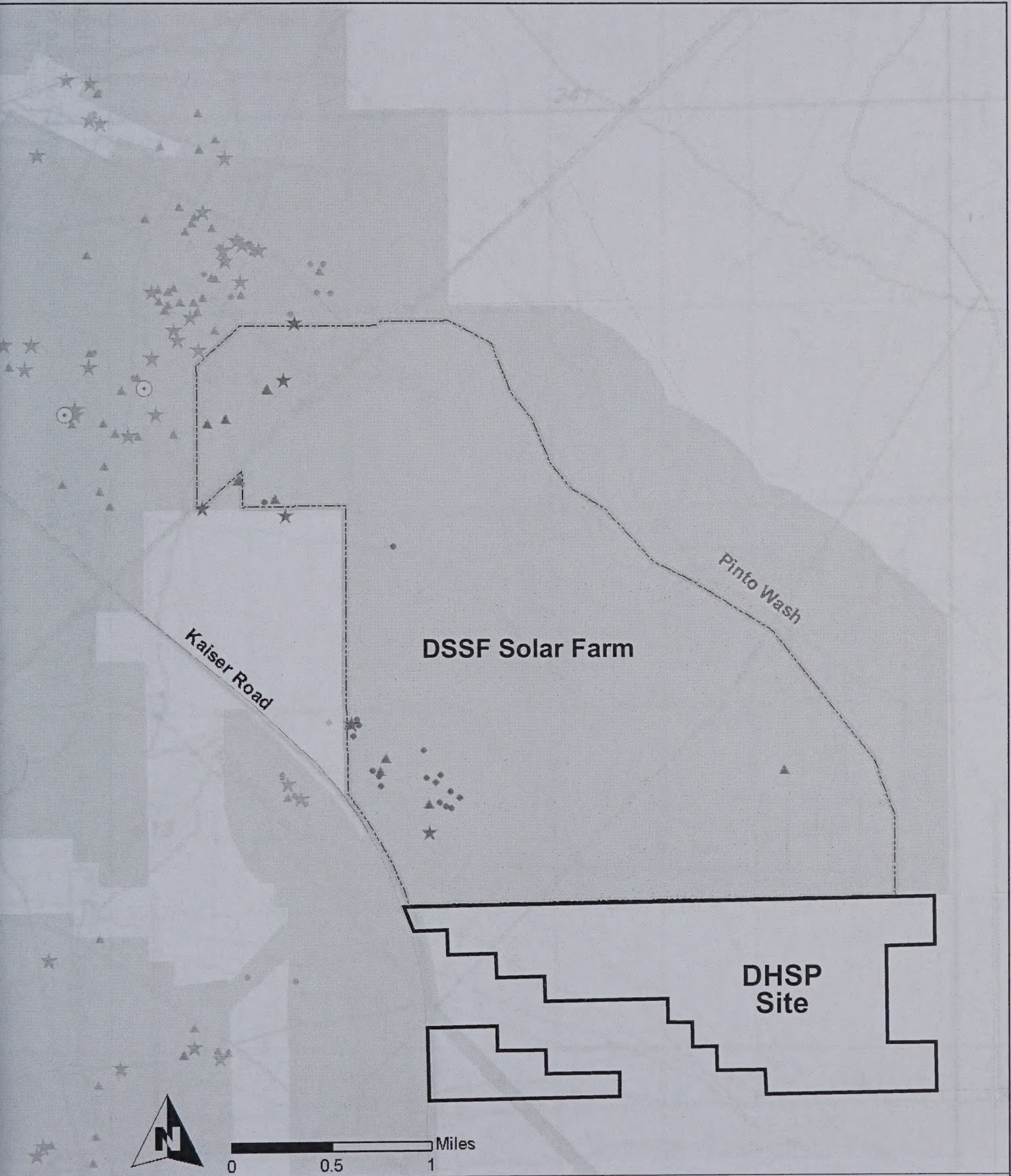


Figure 2

Desert Tortoise Survey Results

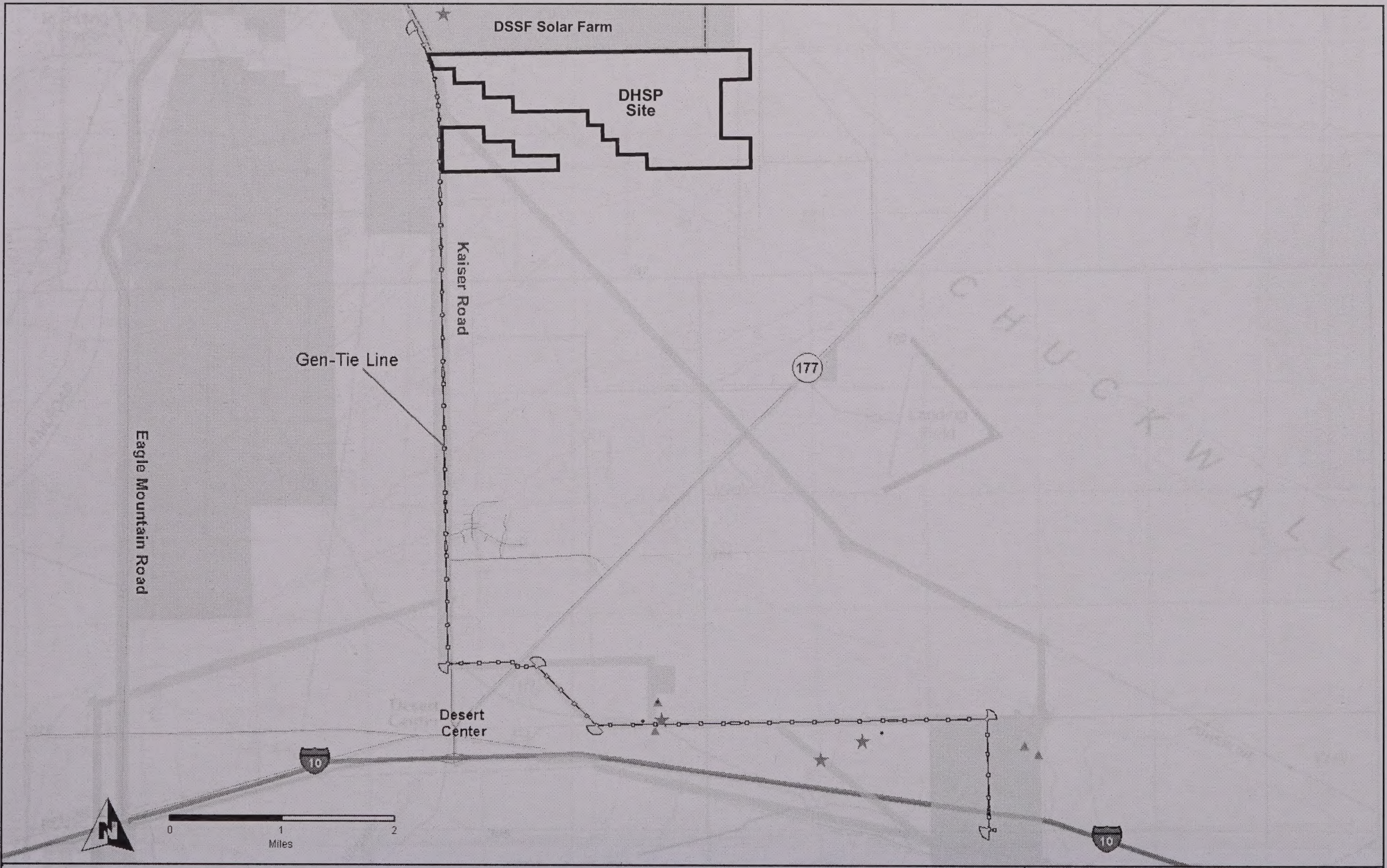


Aspen Environmental Group

Source: Ironwood and Woodard, 2011.

Figure 3

Active Desert Tortoise Sign-
Desert Sunlight Solar Farm Project

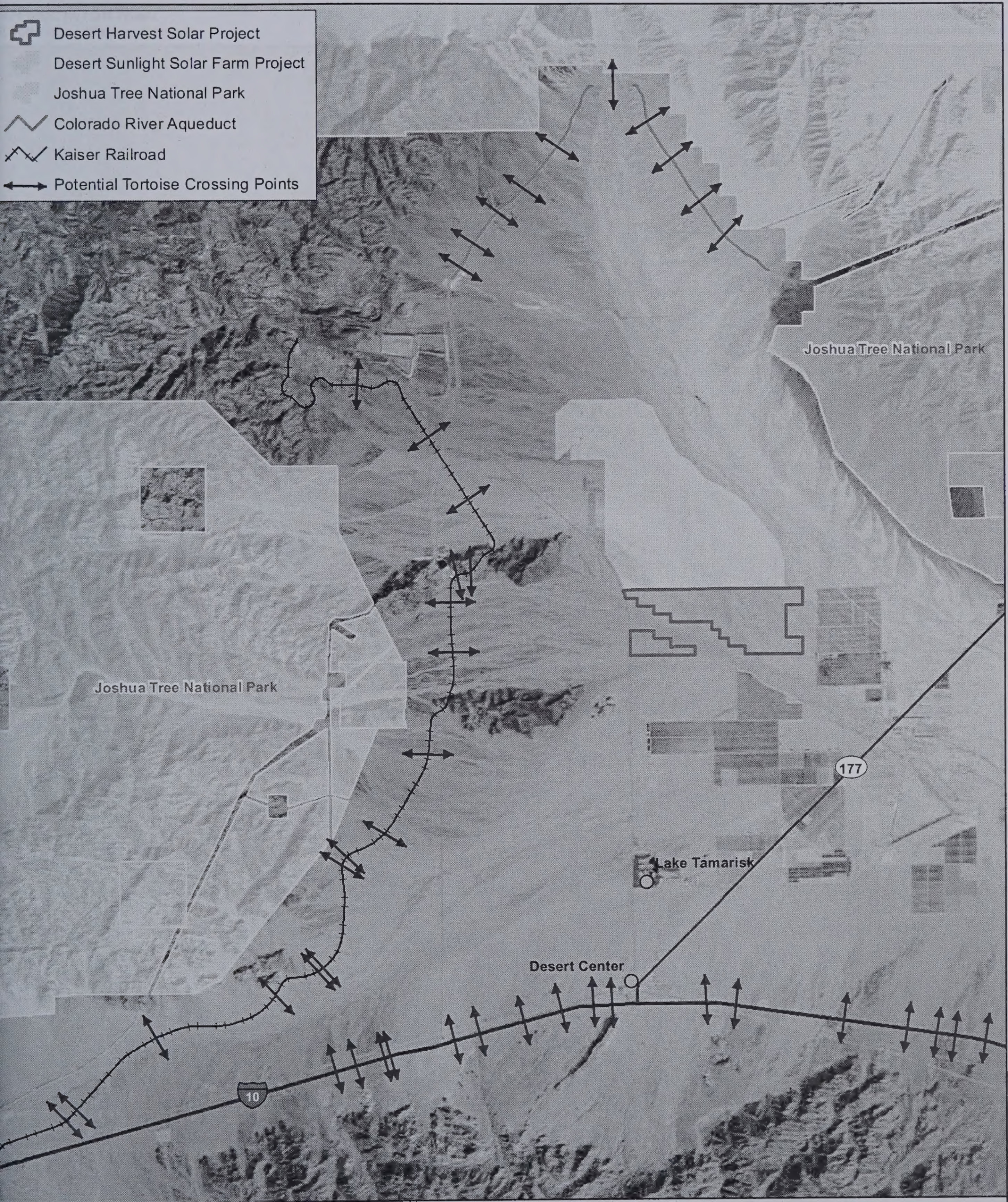


Aspen Environmental Group

Source: Ironwood and Woodard, 2011.

Figure 4

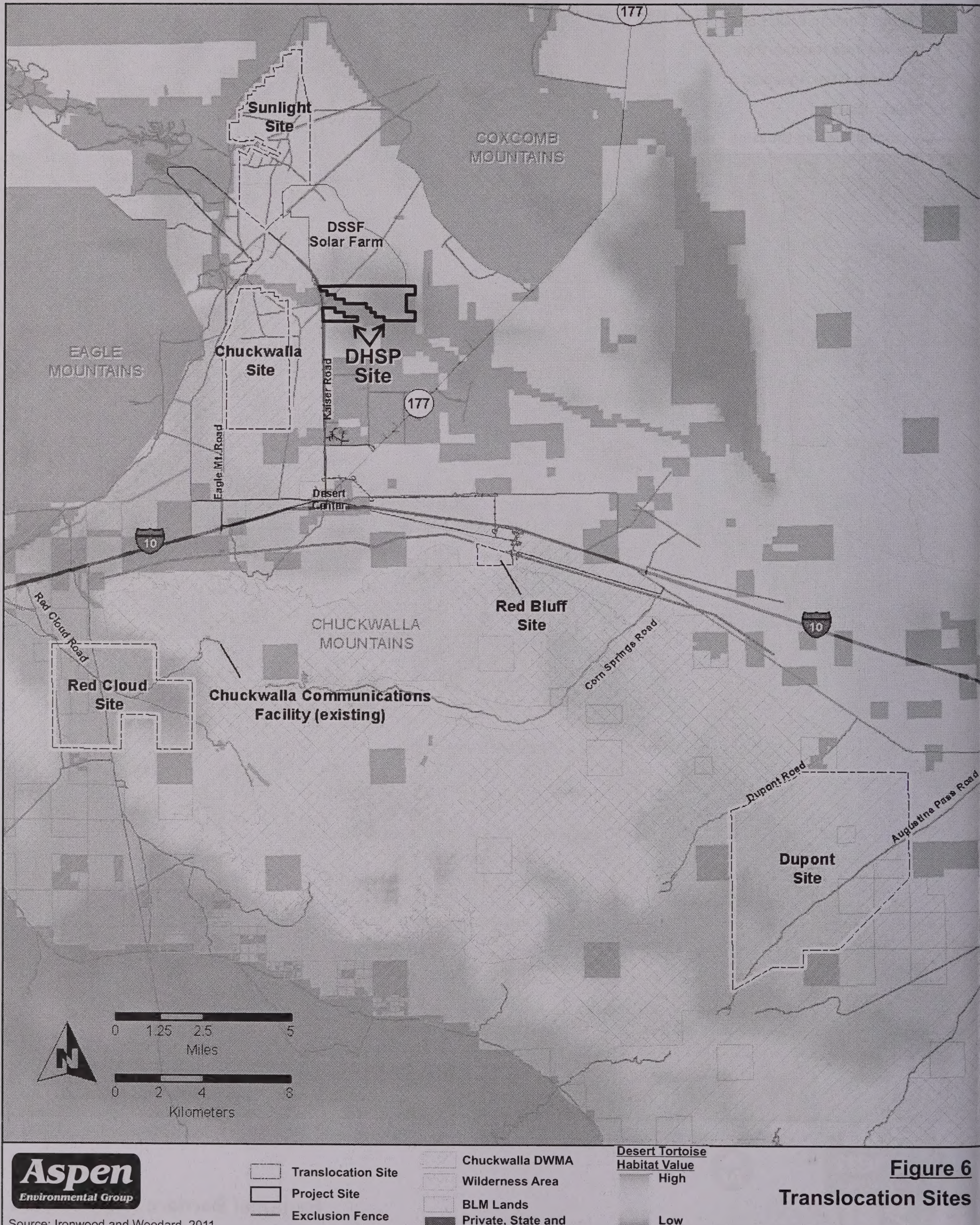
Active Desert Tortoise Sign-Gen-Tie Line


Desert Harvest Solar Project
Desert Sunlight Solar Farm Project
Joshua Tree National Park
Colorado River Aqueduct
Kaiser Railroad
Potential Tortoise Crossing Points
Joshua Tree National Park
Joshua Tree National Park
177
Lake Tamarisk
Desert Center
10
0
2
4
Miles

Aspen Environmental Group

Figure 5

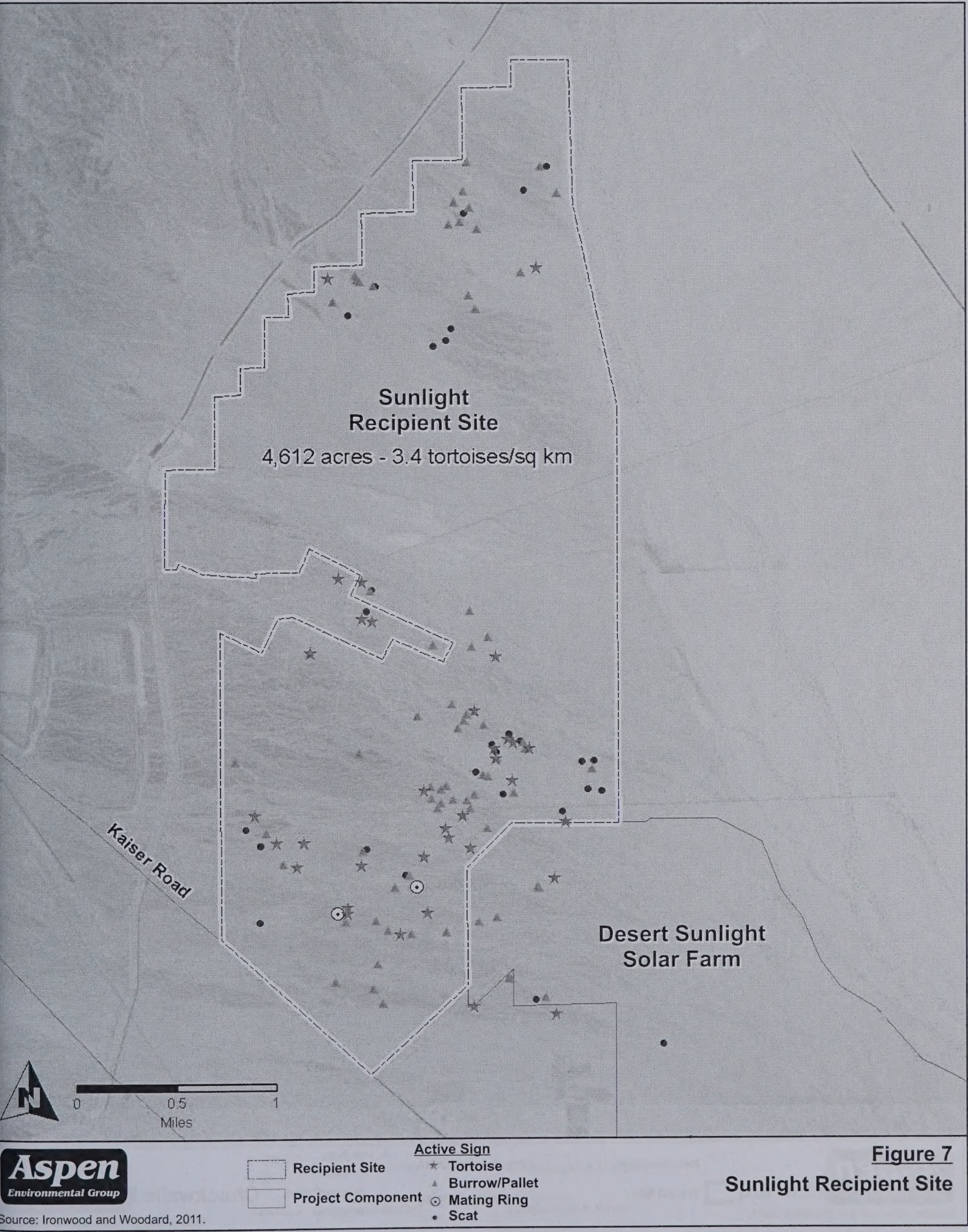
Regional Barriers to Movement



Source: Ironwood and Woodard, 2011.

Figure 6

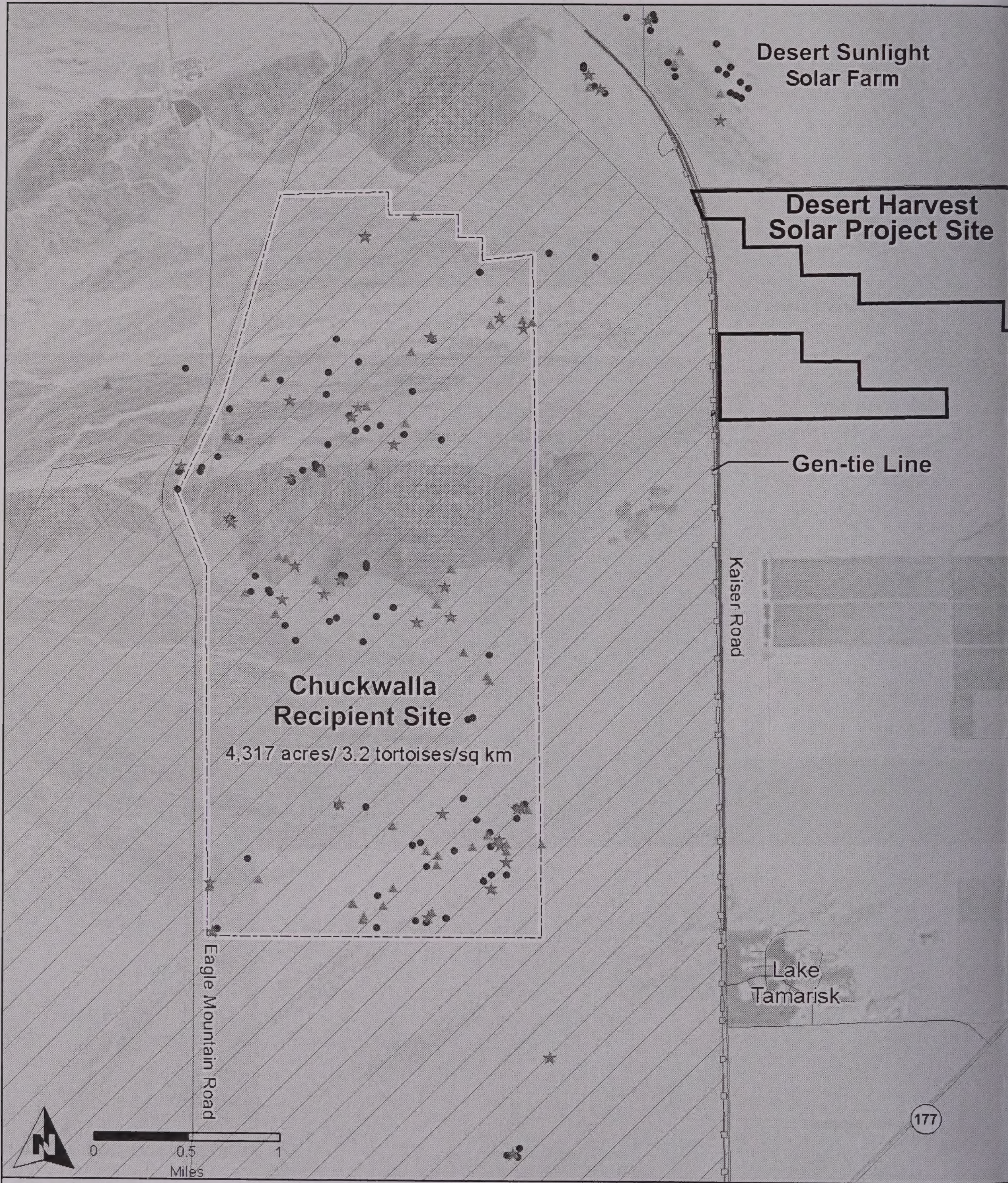
Translocation Sites



Source: Ironwood and Woodard, 2011.

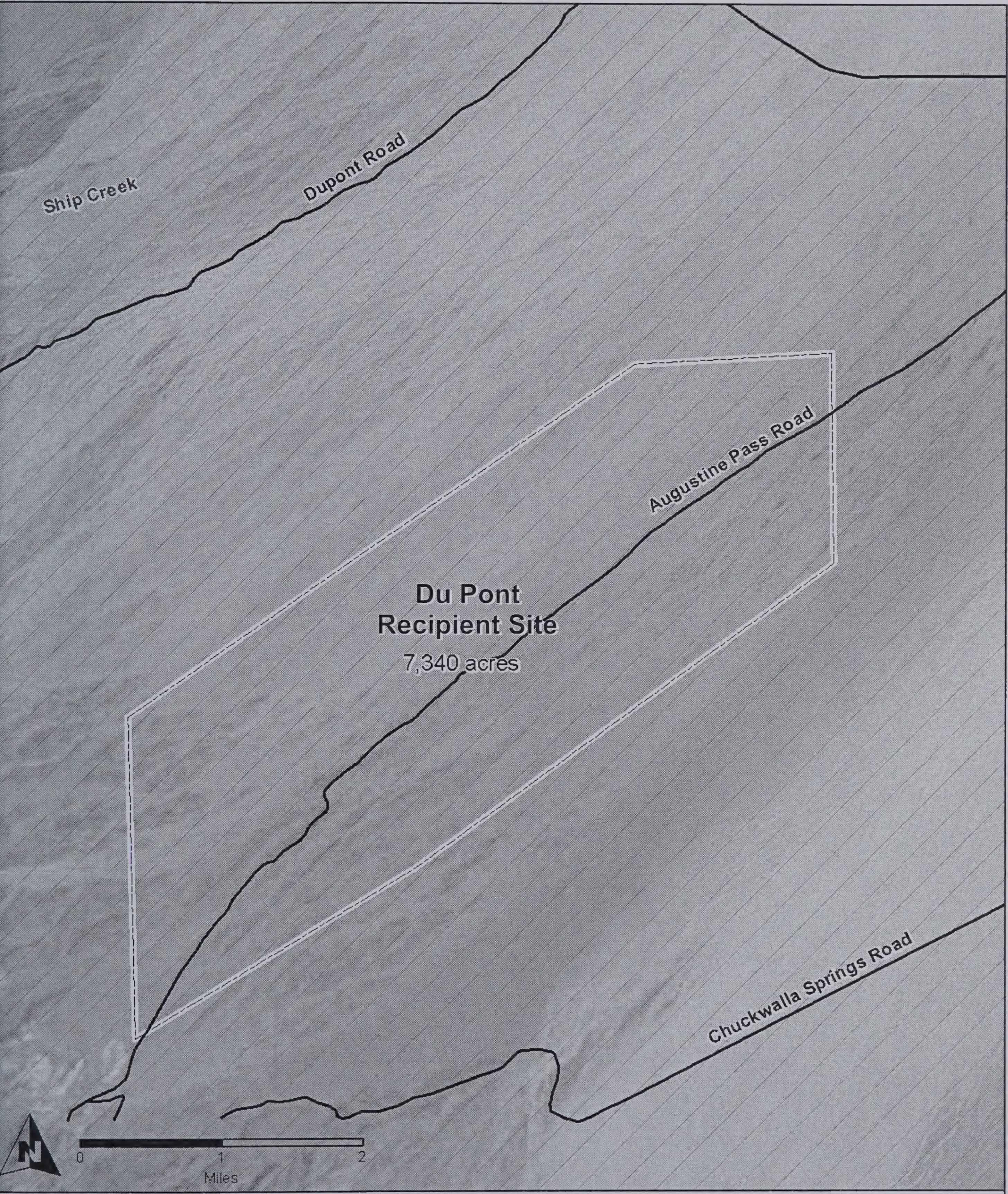
Figure 7

Sunlight Recipient Site



Source: Ironwood and Woodard, 2011.

Figure 8
Chuckwalla Recipient Site



ource: Ironwood and Woodard, 2011.

Figure 9
DuPont Recipient Site